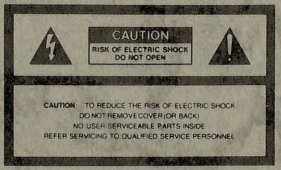
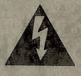
Roland

MIDI DIGITAL SAMPLER

S-550

Owner's Manual





The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK OR INJURY TO PERSONS.

IMPORTANT SAFETY INSTRUCTIONS

WARNING When using electric products, basic precautions should always be followed, including the following;

1. Read all the instructions before using the product.
2. To reduce the risk of injury, close supervision is necessary when a product is used near children.
3. Do not use this product near water- for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
4. This product should be used only with a cart or stand that is recommended by the manufacture.
5. This product, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss.
   Do not operate for a long period of time at a high volume level or at level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
6. The product should be located so that its location or position does not interfere with its proper ventilation.
7. The product should be located away from heat sources such as radiators, heat registers or other products that produce heat.
8. The product should avoid using in where it may be effected by dust.
9. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
10. The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time.
11. Do not tread on the power-supply cord.
12. Do not pull the cord but hold the plug when unplugging.
13. When setting up with any other instruments, the procedure should be followed in accordance with instruction manual.
14. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
15. The product should be serviced by qualified service personnel when:
    A: The power-supply cord or the plug has been damaged; or
    B: Objects have fallen, or liquid has been spilled into the product; or
    C: The product has been exposed to rain; or
    D: The product does not appear to operate normally or exhibits a marked change in performance: or
    E: The product has been dropped, or the enclosure damaged.
16. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

SAVE THESE INSTRUCTIONS

WARNING

THIS APPARATUS MUST BE EARTH GROUNDED.

The three conductors of the mains lead attached to this apparatus are identified with color as shown in the table below, together with the matching terminal on the UK type power plug. When connecting the mains lead to a plug, be sure to connect each conductor to the correct terminal, as indicated.
"This instruction applies to the product for United Kingdom."

MAINS LEADS		PLUG
Conductor	Color	Mark on the matching terminal
Live	Brown	Red or letter L
Neutral	Blue	Black or letter N
Grounding	Green-Yellow	Green, Green-Yellow, letter E or symbol

Bescheinigung des Herstellers / Importeurs

Hiermit wird bescheinigt, daß der/die/das

ROLAND DIGITAL SAMPLER S-550
(Gerat, Typ, Bezeichnung)

in Übereinstimmung mit den Bestimmungen der

Amtsbl. Vfg 1046 / 1984
(Amtsblattverfugung)

funk-entstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprufung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Roland Corporation Osaka / Japan
Name des Herstellers/Importeurs

RADIO AND TELEVISION INTERFERENCE

"**Warning** – This equipment has been verified to comply with the limits for a Class B computing device, pursuant to Subpart J, of Part 15, of FCC rules. Operation with non-certified or non-verified equipment is likely to result in interference to radio and TV reception."

The equipment described in this manual generates and uses radio-frequency energy. If it is not installed and used properly, that is, in strict accordance with our instructions, it may cause interference with radio and television reception.

This equipment has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J, of Part 15, of FCC Rules. These rules are designed to provide reasonable protection against such a interference in a residential installation. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by the following measure:

- Disconnect other devices and their input/output cables one at a time. If the interference stops, it is caused by either the other device or its I/O cable.

These devices usually require Roland designated shielded I/O cables. For Roland devices, you can obtain the proper shielded cable from your dealer. For non Roland devices, contact the manufacturer or dealer for assistance.

If your equipment does cause interference to radio or television reception, you can try to correct the interference by using one or more of the following measures:

- Turn the TV or radio antenna until the interferences stops.
- Move the equipment to one side or the other of the TV or radio.
- Move the equipment farther away from the TV or radio.
- Plug the equipment into an outlet that is on a different circuit than the TV or radio. (That is, make certain the equipment and the radio or television set are on circuits controlled by different circuit breakers or fuses.)
- Consider installing a rooftop television antenna with coaxial cable lead-in between the antenna and TV.

If necessary, you should consult your dealer or an experienced radio/television technician for additional suggestions. You may find helpful the following booklet prepared by the Federal Communications Commision:

"How to Identify and Resolve Radio-TV Interference Problems"

This booklet is available from the U.S. Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.

Please read the separate volume "MIDI", before reading this owner's manual.

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The S－550, 16 voice polyphonic sampler module, can record (sample and record into computer memory) all sorts of sounds, then play these sounds. It adopts the expanded 16 bit system that processes all signals digitally and therefore creates sounds of excellent quality. It features the maximum sampling time of 28.8 seconds at 30kHz sampling, and the memory capacity of 64 Tones, 32 Patches.

FEATURES

●The S－550's digital filter circuits allow you to record all sorts of sounds without affecting the quality of the sounds.

●The S－550's digital editing functions including the newly developed TVF (Time Variant Filter) can modify the sampled voice without reducing the sound quality.

●The S－550 can select a sampling frequency of 30 or 15kHz.

●Each of the four Wave Banks can store up to 7.2 seconds of data when the 30kHz sampling frequency is selected.

●The Multi Patch Play function allows the S－550 to simultaneously play up to eight Patches using eight individual receive channels.

●16 voices can be assigned to the eight Individual Output Jacks in eight different ways. This enables you to play Patches or Tones separately through the eight output jacks.

●The S－550 can be set up with a CRT color monitor display featuring an RGB input or a home TV set featuring a video connector, or a black and white display for a computer. Moreover, using the supplied Mouse you can proceed all the necessary operations, watiching the display without touching the button on the panel.

●The entire data (sound data, function data and MIDI data) programmed in the S－550 can be saved onto 3.5" floppy disk for future use.

●The optional Remote Controller RC－100 allows you to control the S－550 without hardly using the front panel.

* It is possible to load a data disk programmed with the S－50 or a Sound Library of the S－50 into the S－550 with the Convert Load function. Also, a S－50 disk can be converted into a S－550 disk with the Convert Disk function.

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PANEL DESCRIPTION (Rear Panel)

Recording Start Jack
When a pedal switch (e.g. DP-2, BOSS FS-5U) is connected, it works as a recording start switch in the sampling (recording) mode.

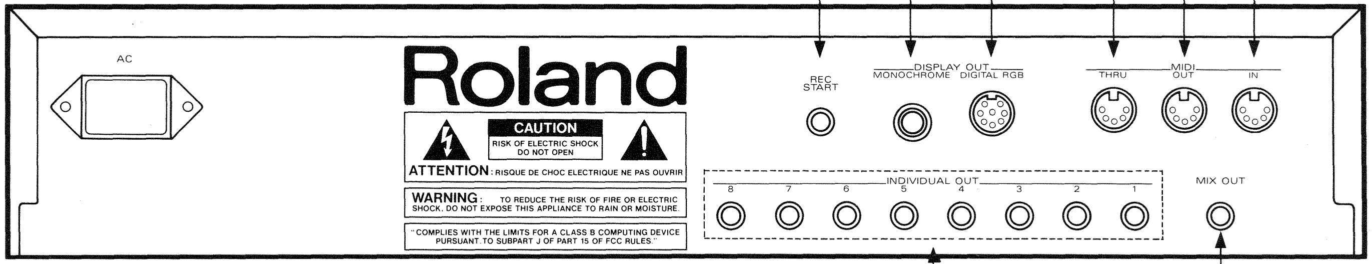
Mono chrome Connector
This connector can be connected to a black and white display unit for a computer, or a home TV set featuring a video input connector. (Note that even a color TV will give a black and white display.)

RGB Connector
This connector can be used for connecting a color monitor display featuring a 200 line digital RGB connector. (See "Important Notes.)

MIDI THRU Connector
Through this, an exact copy of the signal fed into the MIDI IN is transmitted.

MIDI OUT Connector
Through this, the S-550 transmits MIDI messages to an external device.

MIDI IN Connector
Through this, the S-550 receives MIDI massages sent from an external device.



Individual Output Jacks
Each Patch or Tone is output through this jack.

Mix Output Jack
All sounds are sent through this jack.

< How to handle the S-550 >

- Switching the S−550 off will erase all the data programmed in the S−550. Be sure that the Power switch is not touched accidentally, or the power cord is not disconnected.

- The appropriate power supply for this unit is shown on its name plate. Please make sure that the line voltage in your country meets the requirement.

- Do not use the same socket used for any noise generating device (such as a motor or variable lighting system).

- This unit might not work properly if turned on immediately after being turned off. If this happens, simply turn it off, and turn it on again after waiting a few seconds.

- When turning the S−550 on or off, be sure the disk drive is empty.

- When disconnecting the power cord from the socket, do not pull the cord but hold the plug.

- If this unit is not to be used for a long period of time, be sure to disconnect the power cord from the socket.

- It is normal for this unit to get hot while being operated.

- Avoid using this unit in excessive heat or humidity, or where it may be affected by direct sunlight or dust.

- Place this unit in a steady, horizontal place. If it is inclined upward at more than 10 degrees or downward at more than 20 degrees, the disk drive may not function properly.

- Use a soft cloth, and clean only with a mild detergent.

- Do not use solvents such as paint thinner.

If this unit happens to fail to function properly, turn it off once, then turn it on again.

< How to handle the Mouse >

- Avoid using the Mouse where it may be affected by dust. Specially, the ball is easily damaged by water, grease and dust.

- For cleaning, use a soft cloth. Never use solvents such as thinner.

- When the ball needs cleaning, remove the bottom cover as follows, then wipe the ball and the inside the Mouse with a soft cloth.(Do not dismantle other parts.)

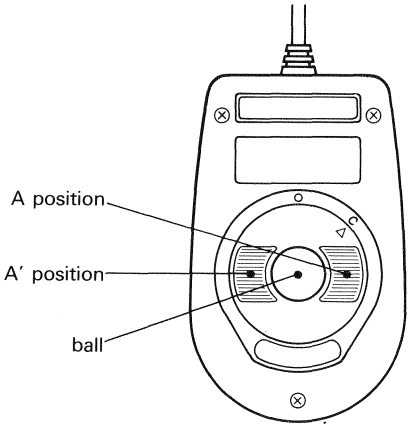
  1) **Push your fingers onto the A and A' positions on the bottom cover, then rotate it counterclockwise, matching the ▲ mark to the O position.**

  2) **Turn over the Mouse, and remove the ball together with the bottom cover.**

  3) **Wipe the ball and replace it to the Mouse.**

  4) **Place the cover with the ▲ mark matching the O position.**

  5) **Place your fingers onto the A and A' positions on the bottom cover, then rotate it clockwise, matching the ▲ mark to the C position.**



- Use the Mouse on a smooth and vertical face.

- Do not drop the Mouse or give strong shock to it.

- Do not hold the cord when carrying the Mouse.

[Connecting the Mouse and RC-100]

By connecting the supplied Mouse to the EXT CTRL Connector, nearly all the operations can be proceeded with the Mouse. The Mouse also allows you to set points of an envelope or draw a waveform.

By connecting the optional remote controller RC-100 to the EXT CTRL Connector, the distant S-550 can be controlled by operating the RC-100. The Mouse can also be connected to the RC-100.

＊Connect the Mouse or RC-100 to the EXT CTRL Connector without bending it.

＊Do not connect the EXT CTRL Connector to any other device but the supplied Mouse (MU-1) and the RC-100.

＊The controller (Mouse or RC-100) connected to the S-550 does not work unless the EXT CTRL Control Switch is turned on as shown on page 23 "Power-up and Booting".

＊If you wish to connect or disconnect a controller after the S-550 has already been booted, you need to change the setting of the Aux Control Switch as shown on page 111 "Selecting the Controller Mode".

＊Before using the RC-100, be sure to push the Reset Switch.

[Connecting a CRT Display]

For operating the S-550, a CRT Display is essential.

＊The Display window on the S-550 is adequate for playing the programmed data, loading data from a disk, saving data onto a disk, etc.

To connect a 200 line black and white display for a computer, or a home TV set featuring a video input jack, use the connector for a Monochrome monitor display (MONOCHROME).

Before connecting a color display to the S-550, please make sure that the monitor's input matches the output of the S-550. If not, do not use the monitor with the S-550. The output of the S-550's RGB Connector matches the TTL RGB 200 lines.

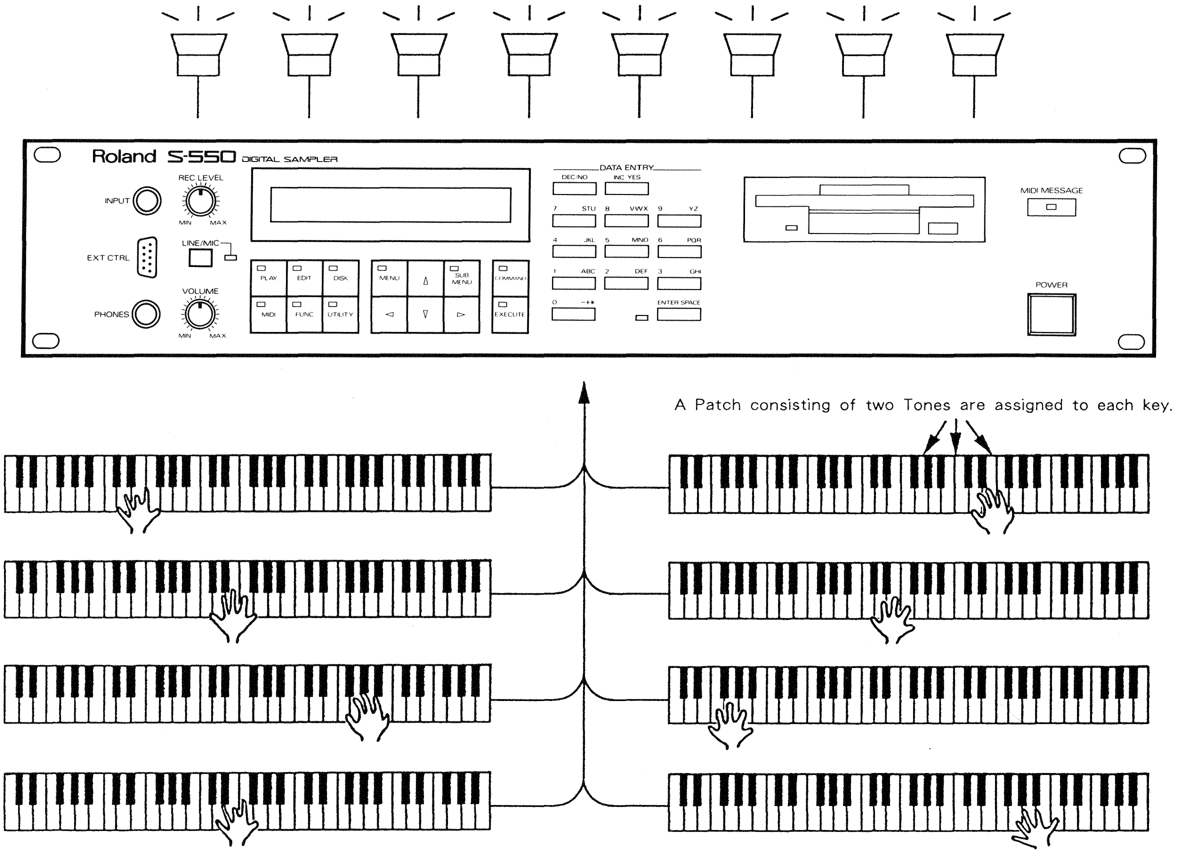
OUTLINE

The S−550 can be played in 16 voice polyphonic by MIDI messages sent from the controller connected to the MIDI IN.

The S−550 can have eight receive channels and therefore can receive eight different messages separately and play them.

The S−550 receives 109 key (C0 to C9) Note messages and plays them with any of the 32 Tones. This function can be effectively used for assigning different samples (instrument samples) to different sound ranges, resolving unnatural sounding caused by pitch difference, or for assigning a drum voice or special effect to each key. Each Tone assigned to a key is called a Patch. The S−550 can store up to 32 Patches in the internal memory.

The S−550 can set eight receive channels, therefore, up to eight different Patches can be played simultaneously, allowing you to enjoy orchestration by using only one S−550.

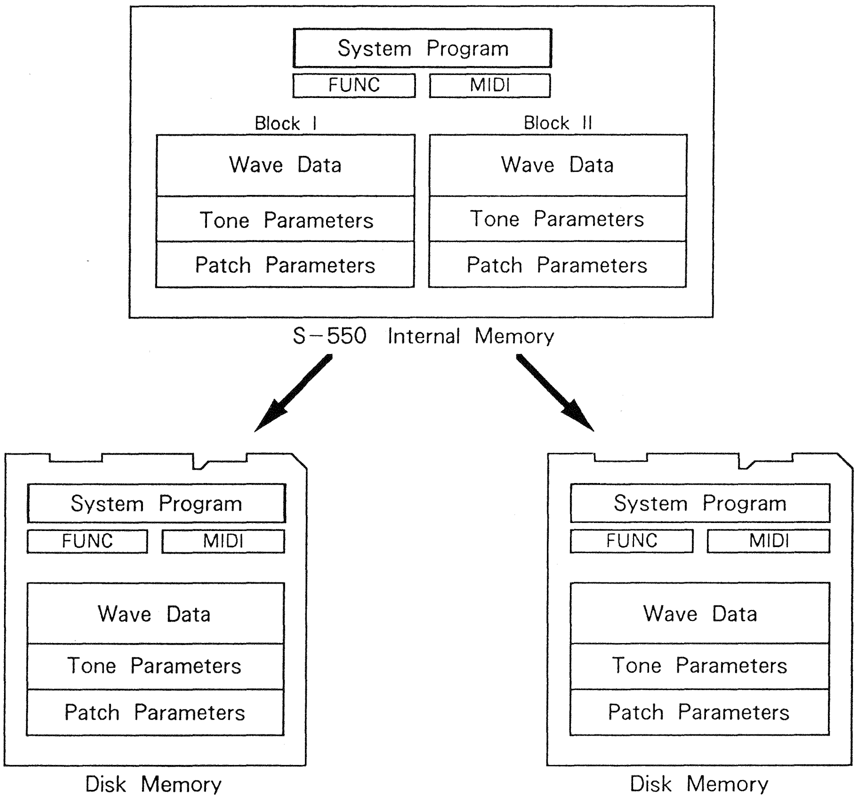


Up to eight different Patches can be played on the individual channels and transmitted from the individual jacks.

2. Data Programming and Saving

Data programmed on the S−550 consists of Block data (sound data), Function data (for setting functions) and MIDI data (for MIDI receiving setting). All of them can be saved onto a floppy disk or loaded back to the S−550.

Block data programmed in the internal memory can be saved onto two floppy disks, each disk can store one block data. One block of data (=one floppy disk) is sufficient for controlling the S−550.



a. Sound Data (Block Data)

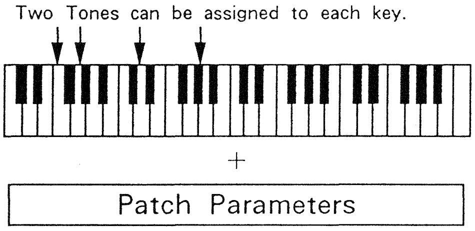
The S−550 can process the Sound Data in the Utility or Edit mode. Sound data is programmed for each Block.

1) Wave Data

A sample is stored in a Wave Bank as Wave data. There are two Blocks in the S−550's internal memory. Each Block has two Wave Banks, A and B. These four Banks can store up to 28.8 second sample (at 30kHz sampling frequency).

3) Patches

Any two of the 32 Tones can be assigned to a different key. The key assignment of the Tones, and the performance controlling functions (Patch Parameters) are combined, making a Patch. Up to 16 Patches in each Block, total of 32 Patches can be programmed in the S－550.



b. Function Data and MIDI Data

The function parameters set in the Play or Func mode are written in memory as Function data. MIDI functions (MIDI receive functions) are written as MIDI data.

The S－550's internal memory can store one set of Function data and MIDI data.

c. Data Saving

The data programmed on the S－550 can be written in the internal memory. Data in memory, however, will be erased when the unit is turned off. To retain the data even after the unit is switched off, save it onto a floppy disk.

A brand new disk or the disk used for other than the S－550 cannot be used for saving the data in the S－550, unless being formatted (see page 139 “Formatting”). Using the Backup function, a disk is automatically formatted then saves each Block data onto a floppy disk separately.

● Mode Selection

Select one of the six operation modes. The selected mode is shown at the right corner on the Message Line, and also can be recognized by indicator of the Mode Button's lighting.

Panel or RC－100

Step 1 Push the MODE Button you wish to select.

Mouse

Step 1 Move the Mouse so that MODE is lit in red, then push the button at the left side of the Mouse to open the Mode Window.

Step 2 Move tha Mouse to select the mode you like, and push the button at the left side of the Mouse.

(Pushing the button at the right side will return to the previous indication without selecting the mode.)

● Menu Selection

Each mode has various menus. The selected menu is shown at the right corner on the Message Line.

Panel or RC－100

Step 1 Push the MENU Button to open the Menu Window.

Step 2 Using the ▼ and ▲ buttons, select a menu you like, then push EXECUTE.

(Pushing the Menu Button again will return to the previous indication without selecting the menu.)

Mouse

Step 1 Move the Mouse so tha MENU lights in red, then push the button at the left side of the Mouse to open the Menu Window.

Step 2 Move the Mouse to select the Menu you like and push the button at the left side of the Mouse.

(Pushing the button at the right side will return to the previous indication without selecting the menu.)

● Sub Menu

Sub Menus are used in the Edit, Utility or Disk mode. You can choose a Patch or Tone watching the list.

Panel or the RC－100

Step 1 Push the SUB MENU Button to open the Sub Menu Window.

(Pushing the SUB MENU Button again will close the Sub Menu Window.)

Step 2 Using the ▼ and ▲ buttons, select the menu you want (if there is only one menu, skip this), and push EXECUTE to make the Display show the Patch list or Tone list.

(Pushing the SUB MENU button again will open the Sub Menu Window.)

Step 3 Using the Cursor Buttons (◀,▶,▼ and ▲), select a Patch or Tone you like, then push EXECUTE.

Step 4 Push the SUB MENU button to return to a normal display.

Mouse

Step 1 Move the Mouse so that SUB will light in red, then push the button at the left side to open the Sub Menu Window.

(Pushing the button at the right side will close the Sub Menu Window.)

Step 2 By moving the Mouse, select a menu you want (if there is only one menu, skip this), and push the button located at the left side to make the Display show the Patch list or Tone list.

(Pushing the button at the right side will close the Sub Menu Window.)

Step 3 By moving the Mouse, select a Patch or Tone you like, then push the button at the left.

Step 4 Push the button at the right, and the Menu Window will close and the Display will return to the normal indication.

● Executing a Command

To execute a command, such as sampling, wave processing, data saving or loading, you should open the Command Window.

Panel or RC－100

Step 1 Push COMMAND button to open the Command Window.

(Pushing COMMAND again will close the Command Window.)

Step 2 Using the ▼ and ▲ buttons, select a command you like (if there is only one command, skip this), and push the EXECUTE button to execute the command.

Mouse

Step 1 Move the Mouse so that COM is lit in red, then push the button located at the left side to open the Command Window.

(Pushing the button at the right side will return to the previous Display.)

Step 2 Using the Mouse, select a command you like (if there is only one command, skip this), then push the button at the left to execute the command.

2. Power—up and Booting

The S—550 cannot be played immediately after being turned on. The program on a supplied system disk should be transferred to the S—550 to operate it as a sampler module. This procedure is called Booting. For booting, either of the supplied System Disks can be used, but here, let's boot with the Disk I. After reading the program from the system disk, the S—550 continues to read the Sound Data stored on the same disk (automatically into Block I).

Before switching the S—550 on, check if :

(1) the S—550 is properly set up with the other units

(2) nothing is inserted in the Disk Drive.

Step 1 Turn the S—550 on as outlined below.

To use the supplied Mouse or the optional RC—100, turn the S—550 on while taking the following procedure, and the AUX Control Switch is automatically turned on.

To use the supplied Mouse :

Turn the S—550 while holding the Ten Key 2.

To use the optional RC—100 :

Turn the S—550 while holding the Ten Key 3.

***Before using the RC—100, be sure to push the Reset Switch.**

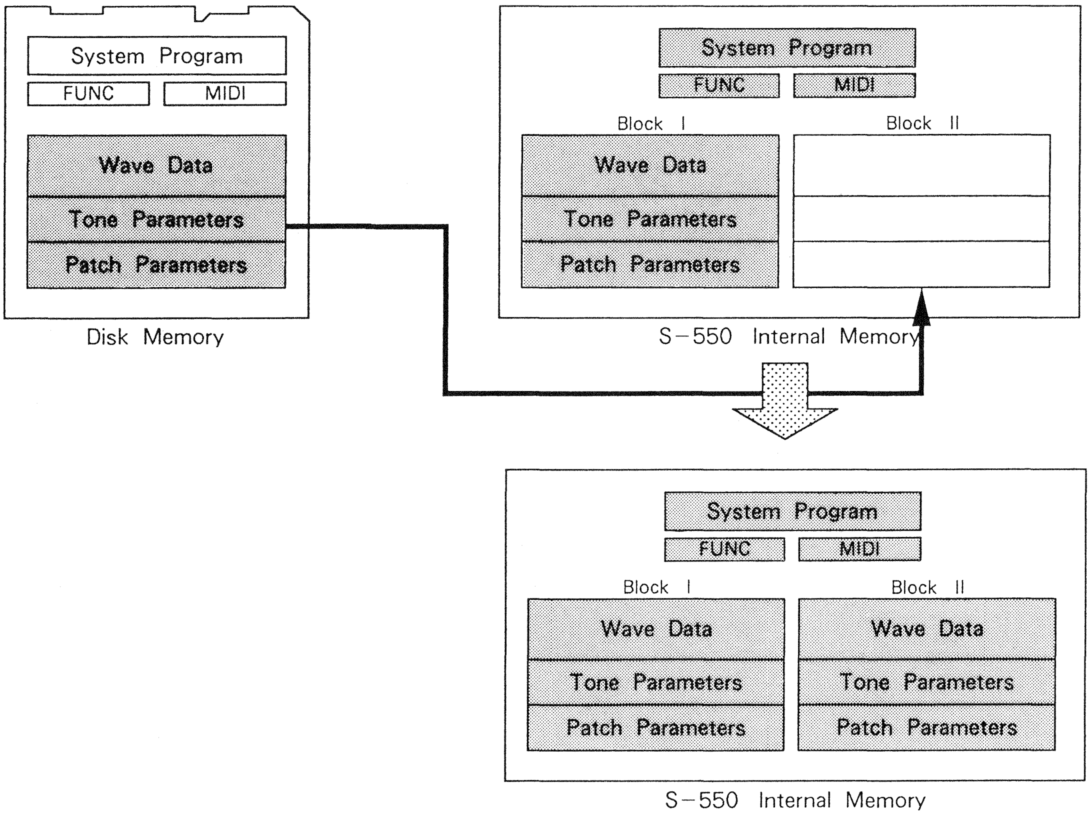
To operate the S—550 without connecting the Mouse or RC—100 :

Turn the S—550 on while holding the Ten Key 1 down.

***If you turn the S—550 on without holding any Ten Key down, the status written on the disk is given priority. The suppplied system disk is default to "Mouse".**

NOTE : When the "RC—100" or "Mouse" mode is selected but the RC—100 or the Mouse is not connected to the S—550, the buttons on the S—550's panel do not work properly.

Now, let's load data into Black II.



Step 3 **Push the YES button.**

The Display shows "**Please change disks**" and "**Are you sure ?**"

Step 4 **Push the Eject Button and take out the Disk I, then insert Disk II.**

Step 5 **Push the YES button, and the Block data is loaded into Block II.**

The number counts down to 00, and loading is completed, automatically returning to the Play mode.

If you push the NO button instead of YES, the unit is returned to the Play mode without loading data into Block II.

***Do not take out the floppy disk or switch the unit off from the moment the disk is inserted until the loading is completed.**

Step 10 Push the Eject Button and take out the floppy disk from the Disk Drive, then return the Protect Tab on the disk to the PROTECT position.

*How to make a backup of the Utility Disk is explained on page 145. The backup procedure for the Utility Disk erases any sound data in the internal memroy. If you wish to retain the data, save it onto a floppy disk before making a backup of the Utility disk.

It may be a good idea to make a backup of your own programs.

If the supplied system disk happens to be erased or damaged, consult your local Roland service center.

[V 1] to [V22] (Voice Fixed Mode)

This mode divides 16 voices into up to 8 voice groups as shown below. You can set a receive channel for each group and assign a Patch to each channel. If the received Note messages exceed the maximum number of voices which can sound, the older sounds are sacrificed.

Voice \ Mode	1	2	3	4	5	6	7	8	9	10	11
A	16	14	12	12	10	10	10	8	8	8	8
B	0	2	4	2	6	4	2	8	6	4	4
C	0	0	0	2	0	2	2	0	2	4	2
D	0	0	0	0	0	0	2	0	0	0	2
E	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0
G	0	0	0	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0	0	0	0

Voice \ Mode	12	13	14	15	16	17	18	19	20	21	22
A	8	6	6	6	6	6	4	4	4	4	2
B	2	6	6	4	4	2	4	4	4	2	2
C	2	2	4	4	2	2	4	4	2	2	2
D	2	2	0	2	2	2	4	2	2	2	2
E	2	0	0	0	2	2	0	2	2	2	2
F	0	0	0	0	0	2	0	0	2	2	2
G	0	0	0	0	0	0	0	0	0	2	2
H	0	0	0	0	0	0	0	0	0	0	2

[Other Parameters]

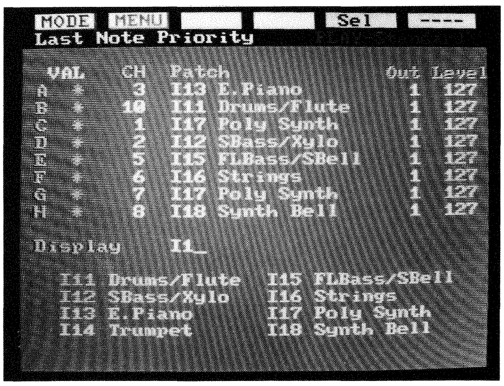
CH (Receive Channel of a Voice Group)

This is the receive channel of each voice group. When it is set to Off, no MIDI message is received, therefore no sound is generated.

When editing a Tone or Patch, set the transmit channel of the connected MIDI device to the same as the receive channel of the voice group A. In this way, you can hear the sound of the Patch or Tone being edited.

Standard

This is the display currently called. In this display, the sound source works the most rapidly.

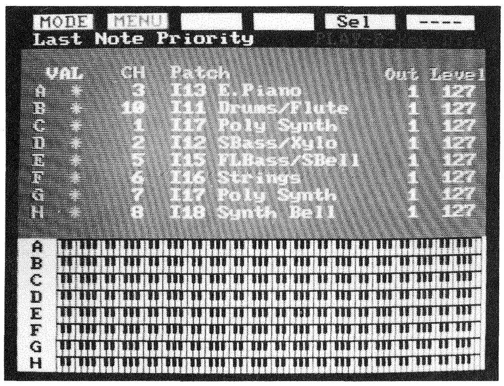


Display [I1_]、 [I2_]、[II1_]、[II2_]

[I1_] : Patch numbers I 11 to I 18
[I2_] : Patch numbers I 21 to I 28
[II1_] : Patch numbers II 11 to II 18
[II2_] : Patch numbers II 21 to II 28

8 Key Disp

Open the Menu Window and select [8 Key Disp].

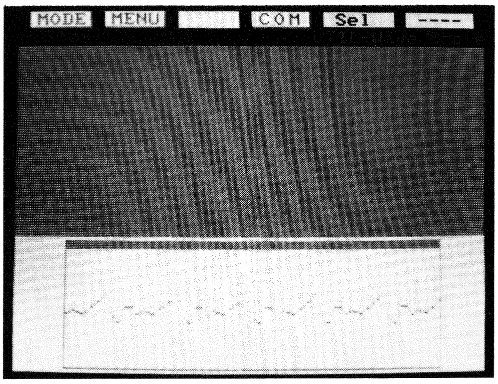


At the lower part of the Display, eight of 109 key keyboards (that can cover all Note numbers received by the S—550) are shown.

When note messages are received and played by each voice group, the relevant keys will flash.

Wave Scope

In this menu, the input signal can be shown as a waveform.



Preparation 1 **Insert the Utility Disk into the Disk Drive.**

Preparation 2 **Push the UTILITY button or open the Mode Menu and select UTIL, to call the UTILITY mode.**

Preparation 3 **Open the Menu Window and select [Wave Scope], and the Command Window will open.**

Push the EXECUTE or the left side button on the Mouse. The Diaplay shows "**START**" and the S−550 is ready for signal input.

A moving wave appears when a voice signal is fed.

Pushing the EXECUTE or the left side button on the Mouse will first show "**STOP**", then stop the movement and show a stationary waveform.

If you wish to see the moving wave again, push the EXECUTE or the left side button on the Mouse.

*You can enter the another mode or menu only from the "STOP"condition.

[Selecting a Destination Tone Number for Writing a sample]

Source

You can select a Tone Number where the sample is to be written. Any of the 62 Tone Numbers can be selected.

When a Sub Tone is selected as a new location, it will become an Original Tone and the Tone Parameters are initialized.

When an Original Tone is selected as a new location, the following will happen.

- ○ **The Wave data that is contained in the selected Tone is erased (it is erased when the Command Window is open before actually sampling), making an empty space (increasing the Remaining Time).**
- ○ **The new Wave data sampled takes the empty space.**
- ○ **Tone parameters are initialized.**
- ○ **A Sub Tone that uses the erased Wave data is deleted, becoming an unused Tone.**

[Tone List Display]

Opening the Sub Menu will call the Tone List. This display will help you selecting a [Source] Tone Number.

The name of an Original Tone is displayed in white, and a SubTone in red.

[Checking Input Level]

As you feed an audio signal, set the level as high as possible without causing the Display to show "OVER", using the Recording Level Knob on the front panel.

The audio signal fed into the S−550 is sent through the Mix Output Jack, and therefore can be monitored through the connected amplifer.

***When sampling from a microphone, you may hear a howling noise. If so, turn down the volume of the amplifier and monitor through headphones.**

[Setting Parameters for Sampling]

Frequency (Sampling Frequency)

This selects the sampling frequency.

[**30**] This records a sound with 30kHz sampling frequency.

[**15**] This records a sound with 15kHz sampling frequency.

Time (Sampling Time)

This sets the sampling time (0.4 sec steps). You can select up to the maximum sampling time. When 15kHz sampling frequency is selected, please multiply the sampling time by 2.

If the maximum sampling time is longer than that of the sample, select a longer sampling time, so that sampling can be more successful. You can truncate the wave later in the Utility mode [TRUNCATE].

Orig. Key (Original Key) [C0] to [C9]

The Original Key represents the key at which the original sample was played.
When sampling from a musical instrument, you may have to set a Key number that matches the pitch of the sampled sound. Middle C is shown as the C4 key, and a semi−tone as #.

A Key number can be entered by assigning the corresponding MIDI Note number with the Ten Key Pad. C4=Note number 60.

***The highest pitch which can be played on the S−550 is 2 octaves above the sampled sound. Higher pitches cannot be played.**

[Executing Sampling]

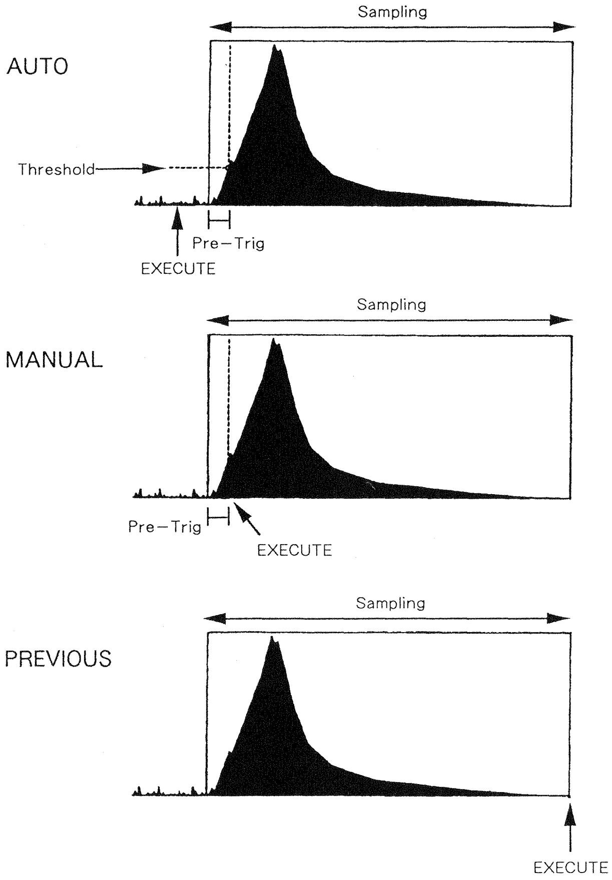
Here, check and see the Display to make sure that you have proceeded correctly so far. Then open a Command Window.

When an Original Tone is selected as a [source] Tone Number, opening the Command Window will erase the previous Wave data, adding the emptied space to the Remaining time, the Display responding with **"Working"**. This, however, does not apply to the sampling which is done without changing the Tone number, Wave Bank or Time.

When "READY" is shown at the Message Line, sampling can be executed.

***The moment "READY" appears, the internal memory starts recording the signal being fed for Pre−trigger or Previous Sampling.**

Three Methods for Sampling



PREVIOUS (Previous Sampling)

Previous Sampling retains the Wave data for the set sampling time, that occures before Step 1 is done. NOTE : The S−550 continuously examines the incoming data stream, and is always sampling. This is very useful for monitoring what you want to sample, and then sample after the fact.(e.g. monitoring a television show and sampling what you have heard.)

Procedure **When the signal to be sampled is fed into the S−550, push the EXECUTE button or the left side button on the Mouse (or the pedal switch connected to the Rec Start Jack on the rear panel),**

After a sound is sampled, the Display shows "Working" for a while. The sampled sound cannot be played while "Working" is being shown.

[Monitoring the sampled Wave]

Before making a Tone with the sampled Wave data and the Tone Parameters, you may wish to play it on the keyboard to hear what it sounds like. Also, in the Display, the waveform and the sampling parameters can be seen.

● Waveform Display

All the Wave data sampled in the Wave Bank is shown in the Display. When using a color display, the following three colors are seen :

Blue ········Wave data previously sampled

Red·········Wave data you have just sampled.

Green······Empty space, which has not yet been used.

● Remaining Time Display

This shows the remaining time of each Wave Bank in 30kHz sampling time.

＊Sampling will initialize all the Tone Parameters except for the Orig Key, therefore, after sampling, you need to truncate unneeded portion (See page 46), then set these parameters (See page 69).

(The default values of the Tone Parameters are shown on page 114.)

[Selecting a Destination Tone]

This is the location (the number of a Tone) where the edited Wave data is to be written. Any of the 64 Tone numbers, except for the one selected for the source Tone, can be selected.

***If you select the Tone number of a source Tone as a destination, "Not Execute" appears in the Display when you try to execute it, and it is not exectued.**

If a Sub Tone is selected as a destination, the edited Wave is written into it, and it therefore becomes an Original Tone.

When an Original Tone is selected as a destination, the following will occur in the S−550.

○The previous Wave data is erased making a space (=increasing the Remaining Time)

○Edited Wave data is written into the empty space in the selected Wave Bank.

○A Sub Tone that uses the erased Wave data is deleted, becoming an unused Tone.

***The new Wave Data is written in the Wave Bank of the same Block as the selected destination Tone.**

When there is no space left for sampling in the destination Wave Bank, "Not Execute" is shown when you try to execute, and writing cannot be executed.

When the remaining space is unsufficient for sampling, the Wave data will be cut.

***The remaining time of each Wave Bank is shown in seconds at a 30kHz sampling frequency. When sampling in 15kHz, multiply it by 2.**

***If there is not enough space, you should delete some un−needed data to increase the remaining time. You may either delete a Tone with [DELETE] in the EDIT mode, or cut off un−needed portions of a wave with [TRUNCATE] in the Utility mode.**

[Selecting a Tone Number to be Truncated]

Source

Select an Original Tone to be truncated. (Here, a Sub Tone cannot be used.) The Wave data of the selected Tone is directly edited. If you wish to retain the original waveform, copy the Tone (page 65).

***Opening the Sub Menu will display the Tone List which you can watch while selecting a Tone. See "Tone List Display" on pages 37 and 38.**

***When Truncate is executed, any Sub Tone that used that particular Wave is deleted. If you wish to retain the Sub Tone, call it with [Tone PRM] in the Edit mode (page 70) and replace the Original Tone, from which it borrows Wave data, with another Tone.**

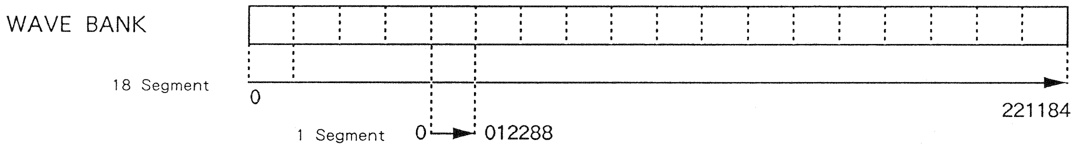
[Setting Points]

Start Point (the beginning address of the needed portion of a wave)

End Point (the end address of the needed portion of a wave)

Set the needed portions of the Wave with the Start and the End points. You can actually listen to the sound while setting three points.

The very beginning of Wave data is address zero. The end of the Wave data that uses one segment (see page 36) is address 012288 (0.4 seconds at 30kHz sampling) and that of the whole Wave Bank is address 221184 (7.2 seconds at 30kHz sampling).



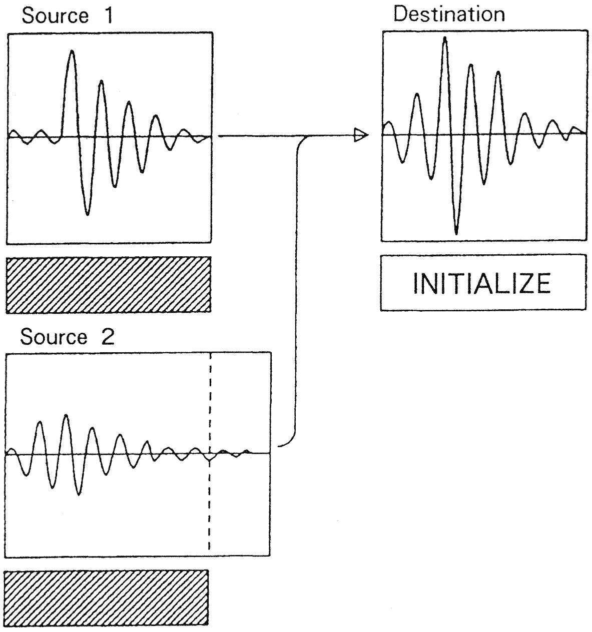
To enter address, use the Ten Key Pad on the S−550, or the DEC and INC buttons, or the buttons on the Mouse. The amount of the change caused by one push can be selected with the following Search Mode.

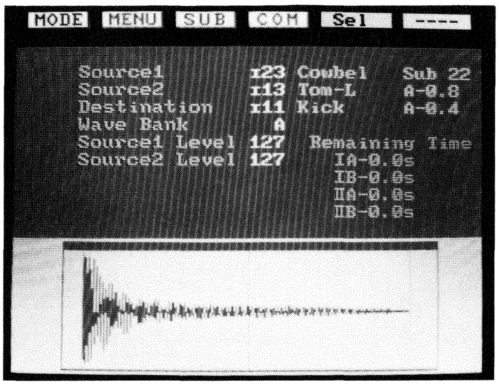
***The addresses of the Start and the End points set here are identical to those set with [LOOP] in the Edit mode. This means that changing addresses here will automatically change those set in the Loop Set mode.**

If you wish to enlarge a particular portion of the Wave, use the three types of Displays in the [LOOP] menu to set the addresses.

Mix

This function mixes two Waves to make a new Original Tone.





Preparation 1 **Insert the Utility disk into the Disk Drive.**

Preparation 2 **Push the Utility button, or open the Mode Menu and select UTIL, to select the Utility mode.**

Preparation 3 **Open the Menu Window and select [Mix].**

[Selecting Tones to be mixed]

Source1
Source2

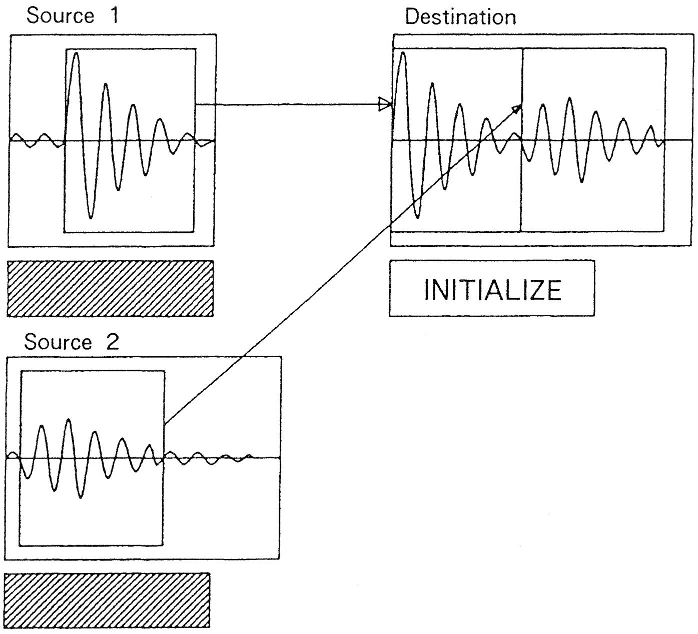
Select two Original Tones to be mixed. (Sub Tones cannot be mixed.) The length of the new Tone is the same as Source 1's, so select the longer Tone for Source 1.

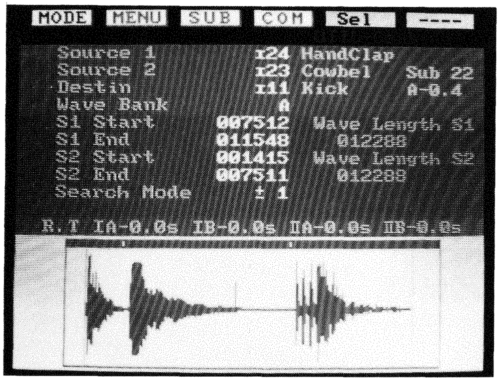
***Wave data of Source 1 is shown at the lower of the Display, showing the Source 1 Tone can be played. Moving the cursor to Source 2 displays the wave data of Source 2, and the Source 2 Tone can be played.**

***The two waves are always mixed from address zero, so you may need to truncate the waves to match the wave heads.(See [Truncate] on page 46.)**

Combine

This function Combines two Waves to make a new Original Tone. The End point of Source 1 is directly joined to the Start point of Source 2. Here, the Tone Parameters are initialized.





Preparation 1 **Insert the Utility disk into the Disk Drive.**

Preparation 2 **Push the Utility button, or open the Mode Menu and select UTIL, to select the Utility mode.**

Preparation 3 **Open the Menu Window and select [Combine].**

[Selecting Tones to be combined]

Source1
Source2
Select two Original Tones to be mixed. (Sub Tones cannot be mixed.)

* Wave data of Source 1 is shown at the lower of the Display, showing the Source 1 Tone can be played. Moving the cursor to Source 2 displays the wave data of Source 2, and the Source 2 Tone can be played.

＊The addresses of the Start and the End points set here are identical to those set with [LOOP] in the Edit mode. This means that changing addresses here will automatically change those set in the Loop Set mode.

If you wish to enlarge a particular portion of the Wave, use the three types of Displays in the [LOOP] menu to set the addresses.

Search Mode

The amount of the change caused by one push can be selected as follows.

[±**1**] Address changes in one step.

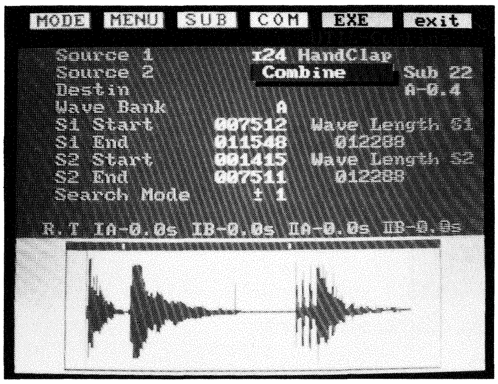
[±**114**] Address changes in 114 steps.

[**Peak**] Address advances from a peak to another.

[Executing Combine]

When all the necessary settings are done, open the command window and execute.

Push the EXECUTE button or the left side button on the Mouse to execute.



[Selecting a Filter Mode]

Mode

[LPF] (Low−pass Filter)

This filter passes lower frequencies and cuts higher frequencies.

[HPF] (High−pass Filter)

This filter passes higher frequencies and cuts lower frequencies.

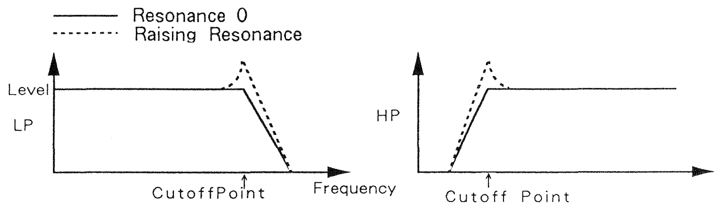
You can select one of the above two filters ; −12dB/Octave Lowpass Filter or Highpass Filter, where cutoff frequency and resonance can be set. By executing D.Filter twice, −24dB/Octave, and three time, −3dBm /Octave filtering effects can be obtained.

Frequency (Cutoff Frequency) [0.1] to [10.0]

This sets the cutoff frequency from 0.1kHz to 10.0kHz.

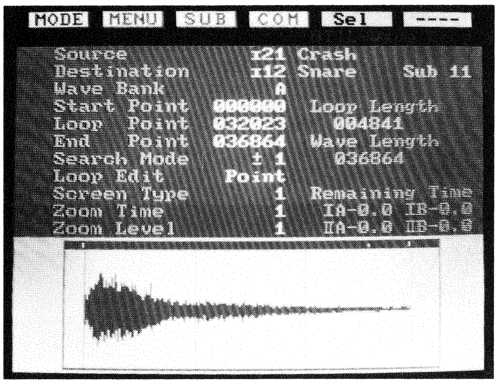
Resonance [0 to 127]

At higher values, the harmonic content at the set cutoff frequency is emphasized.



Wave Loop

By reading a loop (=a part of wave data from the loop point to end point) repeatedly, you can make a longer tone. (See page 75.) Sampled waves, however, often have complicated waveforms, therefore it is very difficult to find out the loop points and end points where the waves are connected smoothly. The Smoothing function of the S−550 changes the shape of the wave from the loop to the end points so that loops can be connected smoothly.



Preparation 1 **Insert the Utility disk into the Disk Drive.**

Preparation 2 **Push the Utility button, or open the Mode Menu and select UTIL, to select the Utility mode.**

Preparation 3 **Open the Menu Window, and select [Wave Loop].**

[Selecting a Tone to be looped]

Source

Select the source Tone to be looped.(A Sub Tone cannot be selected.)

[Selecting a Destiantion Tone]

Destination

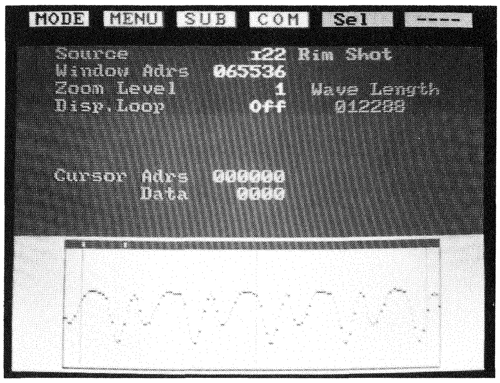
Select a destination Tone where the edited wave data is written. Tone parameters are copied from the Source Tone, but the Loop mode is set to [Forward].

See "Selecting a Destination Tone" on page 45.

If the space of the destination Tone is shorter than the source Tone, "Not Execute" is shown and data cannot be written.

Wave Draw

In this menu, you can draw a waveform using the Mouse.



Preparation 1 **Insert the Utility disk into the Disk Drive.**

Preparation 2 **Push the Utility button, or open the Mode Menu and select UTIL, to select the Utility mode.**

Preparation 3 **Open the Menu Window, and select [Wave Draw].**

[Selecting a Tone for drawing a wave]

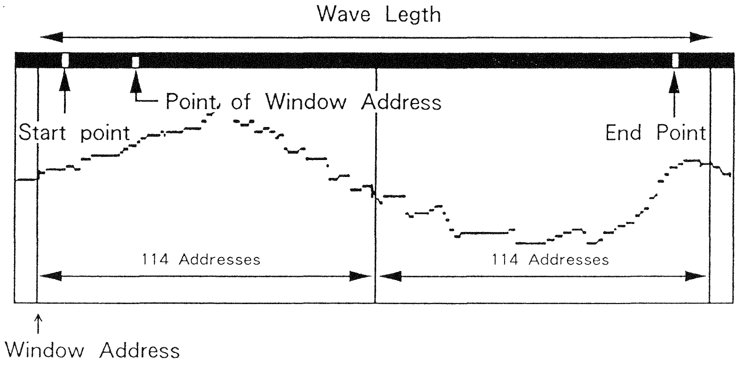
Source

Select an Original Tone where you enter the waveform you draw. The wave data of the selected Tone is directly edited. So if you wish to retain the original waveform, copy the Tone.(See page 65.) Here, you cannot select a Sub Tone.

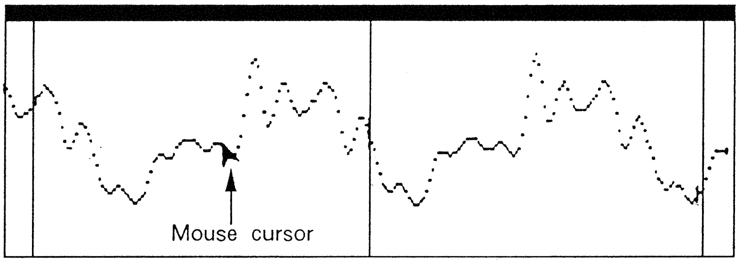
＊Opening the Sub Menu will display the Tone List which you can watch when selecting a Tone.(See "Tone List Display" on pages 37 and 38.)

[Selecting the position (address) of the Wave data to be edited]

Normally, you want to edit a part of the Wave data. The position you want can be assigned with Mouse or using the panel switches on the S−550. The blue belt shown above the wave indication represents the whole length of the Wave data. The small white square on the blue belt represents the position (=Window Address) of the Wave data which you can edit. The wave data at the Window Address is enlarged and shown under the blue belt as much as 228 addresses.



[Drawing a Waveform]



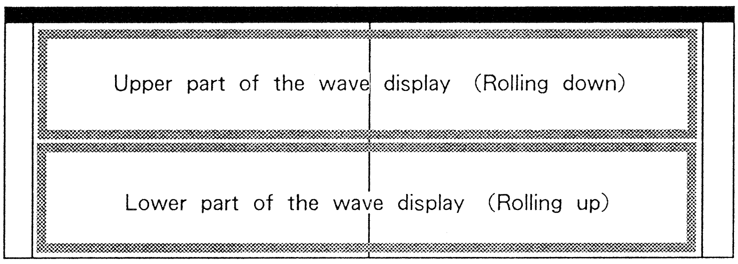
Step 1 **Move the cursor to where you wish to draw the waveform, and draw a wave while holding the left side button on the Mouse.**

The wave you have drawn is shown in red.

Step 2 **Release the button.**

[Rolling up and down]

You can roll up or down the wave display.



Move the cursor at the upper part of the wave display screen, then push the righ side button on the Mouse, and the wave display will be rolled up. Move the cursor at the lower part to roll down.

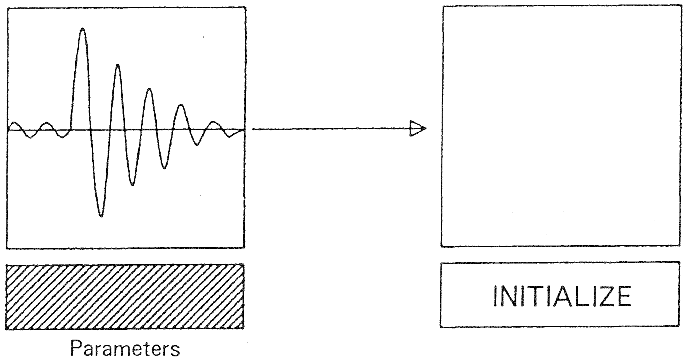
***When the Zoom Level is set to [1], the entire wave is already shown, therefore, it cannot be rolled down or up.**

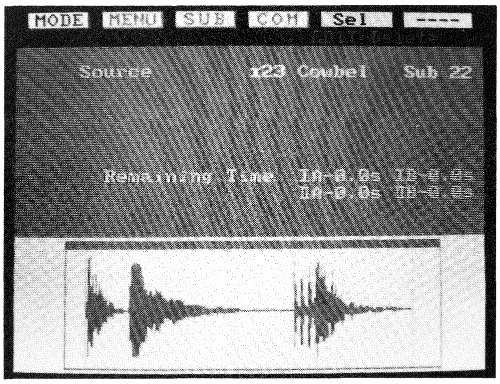
***For successful wave drawing, select the Zoom Level [1], and draw an waveform roughly first, then select [7], roll up or down the wave display and draw a finer line.**

To return the cursor to the parameter display, push the right side button on the Mouse in any mode except [Rolling up and down].

Delete

This menu allows you to delete a Tone or a Wave Bank (consists of several Tones) that is not needed.





Preparation 1 **Push the EDIT button, or open the Mode Menu and select EDIT, to enter the Edit mode.**

Preparation 2 **Open the Menu Window and select [Delete].**

[Deleting an unneeded Tone]

To delete a Tone, call the Tone to the Source position.

***Opening the Sub Menu will display the Tone List which you can watch when selecting a Tone.(See "Tone List Display" on pages 37 and 38.)**

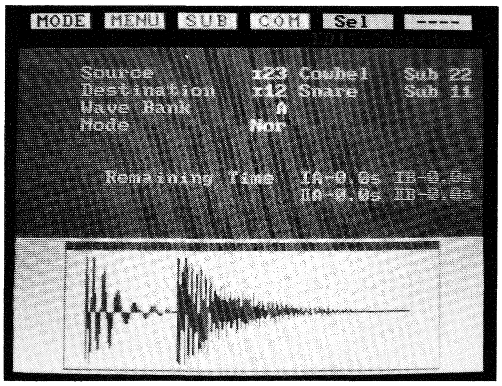
■Deleting an Original Tone Deleting an Original Tone naturally erases the Wave data included in that Tone. The space created is added to the Remaining Time. Also,the Tone Parameters are initialized. By deleting an Original Tone, any Sub Tone that borrows Wave data from it will also be deleted. In other words, the space is regarded as being an empty Sub Tone.

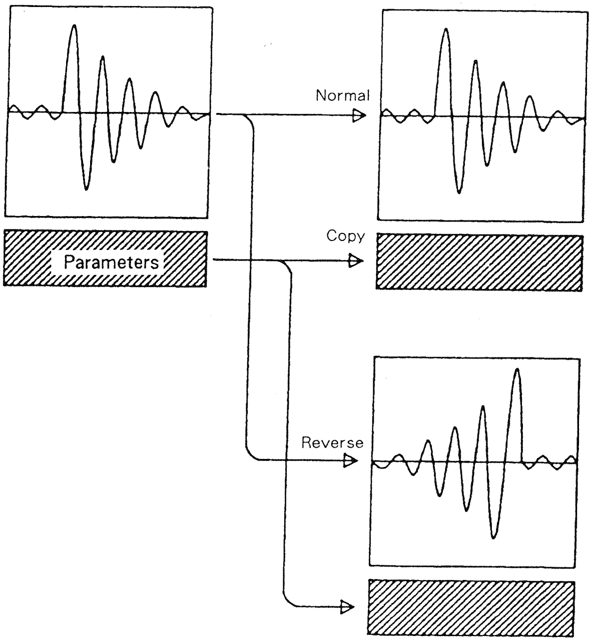
■Deleting a Sub Tone Deleting a Sub Tone will initialize the Tone Parameters. This, therefore, is regarded as an empty Sub Tone, one that does not have an Original Tone. Deleting a Sub Tone, however, does not erase the Original Tone data used by the Sub Tone.

When you have selected the Tone to be deleted, open the command window and execute [1 Tone].

Copy/Move

In this menu, you can copy the entire Wave data and the Tone Parameters, at the same time. Also, Reverse Copy makes a reversed copy of the source Wave.





Preparation 1 **Push the EDIT button, or open the Mode Menu and select EDIT to enter the Edit mode.**

Preparation 2 **Open the Menu Window and select [Copy/Move].**

[Selecting a Tone to be copied (moved)]

Source

Select the Tone you wish to copy or move to the other location.(A Sub Tone cannot be used.)

[Selecting a new location for the Tone]

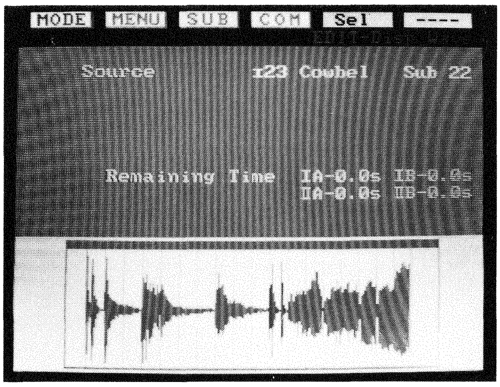
Destination

Select a new location (destination Tone) as explained on page 45.

***Opening the Sub Menu will display the Tone List which you can watch when selecting a Tone.(See "Tone List Display" on pages 37 and 38.)**

Disp. Wave

In this menu, the entire Bank to which the Tone currently in use belongs, is shown.



Preparation 1 **Push the EDIT button, or open the Mode Menu and select EDIT to enter the Edit mode.**

Preparation 2 **Open the Menu Window and select [Disp Wave].**

[Monitoring Wave]

To monitor the wave of one Tone, select the relevant Tone to the Source position.

***Opening the Sub Menu will display the Tone List which you can watch for selecting a Tone.(See "Tone List Display" on pages 37 and 38.)**

The entire Wave Bank to which the selected Tone belongs is shown. If an Original Tone is selected, the selected Tone is shown in red and the other Tones are shown in blue.

***When a Sub Tone is in use, the wave data of the Original Tone that is used in the Sub Tone is shown in red.**

***If the selected Tone has already been deleted, Wave Bank A of that Block is shown. In this case, red wave indication is not shown.**

***When you have selected the Tone to be monitored, open the command window and select [1 Tone], then push the EXECUTE button or the left side button on the Mouse.**

4 Setting Tone Parameters

Tone Parameters involve how the recorded Wave data is read and reconstuncted. Wave data is not transformed by editing Tone Parameters, therefore the Tone Parameters may be edited as many times you like without affecting the Wave data itself.

If you wish to listen to the Tone while editing a Tone Parameter, set the receive channel of Voic Group A to the same number as the tranmsit channel of the extneral MIDI device.

Tone PRM (Setting Main Tone Parameter) (Page 70)

Loop (Setting a Loop) (Page 75)

LFO (Setting LFO modulation) (Page 82)

TVF (Setting Time Variant Filter) (Page 86)

TVA (Setting Time Variant Amplifier) (Page 92)

Tone Map (Parameter Setting with Tone Map) (Page 96)

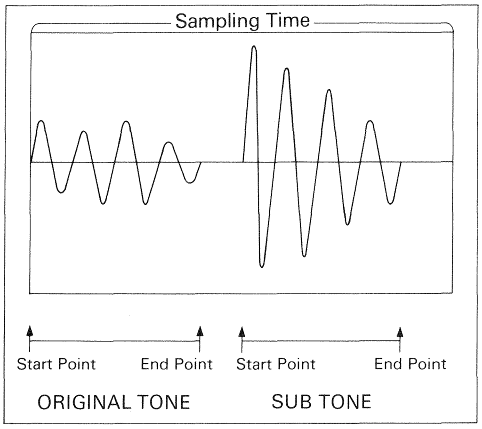
[Making a Sub Tone]

Original Tone **[I 11 to II 48]** / [＊＊＊]

The S−550 allows you to borrow the Wave data from an Original Tone and make a different Tone (=Sub Tone) with different values of Tone Parameters. A Sub Tone does not sound unless Wave data is borrowed from an Original Tone.

Call a Sub Tone or unused Tone in the Tone List Display, then here, select the Original Tone from which Wave data is borrowed. When an Original Tone is selected, Tone Parameters that are involved with looping are copied to that Tone. And the Wave data is read from that Tone by playing the keyboard.

You can make a Sub Tone which is completely different from the Original Tone which shares the same Wave data. For instance, you can add vibrato or change the envelope to make a sound of different nuance. Two sounds can be created from one Wave data by connecting two waves using Truncate (page 46) and Combine (page 51), then setting two different Start and End points. This makes the Wave Banks more useful. The system disk contains many Tones made in this way.



＊It is not possible to borrow an Original Tone from a different Block.

＊An Original Tone has its own Wave data. When an Original Tone is called, "＊＊＊" is shown and this cannot be changed.

＊If a Sub Tone is selected, "−−−" is shown and no sound is heard.

＊When there is no empty Tone, erase an unneeded Tone with the Delete function (page 63), then call the Tone number of the deleted Tone.

TVF (TVF On/Off) **[On/Off]**

When the TVF (Time Variant Filter) is set to [On], the cutoff points of the Digital Filter change as set in [TVF] menu.(See page 86.)

Output Assign (Assigning Tones to Output Jacks) [1 to 8]

Tones are output from the output jacks assigned in [Output Assign] = [Tone] (page 103) and the jacks set in this parameter.

Level (Tone Level) **[0 to 127]**

This adjusts the volume of each Tone.

Name (Tone Name)

Up to eight letters can be used for naming a Tone.

***A Tone name can also be entered with the Ten Key Pad. Each push of the number key will call a letter in the sequence shown below.**

1	→A→B→C	7	S→T→U→
2	→D→E→F	8	→V→W→X
3	→G→H→I	9	→Y→Z→/
4	→J→K→L	0	→+→−→×
5	→M→N→O	ENT	Space
6	→P→Q→R		

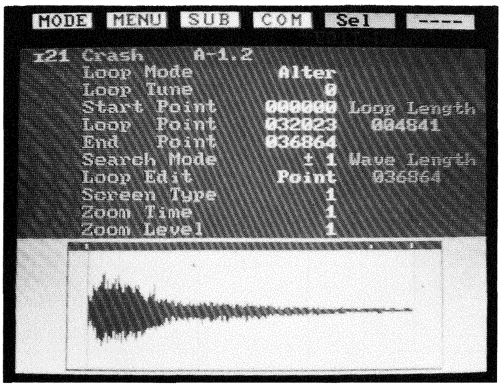
[Executing Commands]

● Initializing, Copying and Swapping Parameters

INT initializes the Parameters of the Tone currently called. COPY copies the Parameters of a source Tone to the Tone currently called. SWAP swaps the Parameters of a source Tone with the Tone currently called.

To assign the source Tone for COPY or SWAP, open the Sub Menu and call C.Source (Command Source) where you select the source Tone from the Tone List display.

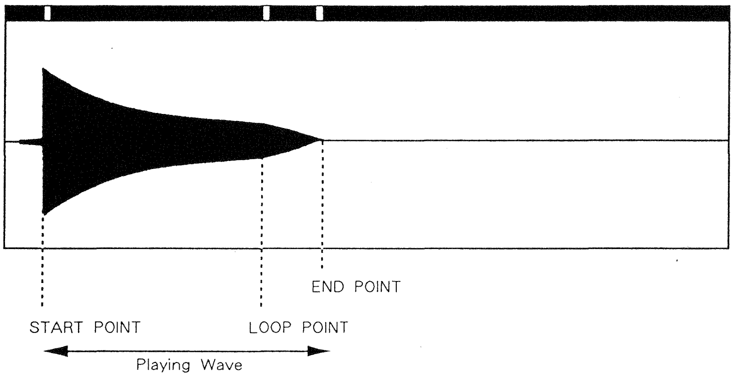
Loop



Preparation 1	**Push the EDIT button, or open the Mode Menu and select EDIT, to enter the Edit mode.**
Preparation 2	**Open the Menu Window and select [Loop].**

One Shot is playing a sample only once, therefore the sound disappears instantaneously. Reverse is playing a sample once in a reverse direction. If you wish the sample to be played longer than just once, Looping lets the wave data or a part of the wave data play as long as you push a key. One Shot may be good for percussive sounds, and Looping is ideal for flute or violine.

The sampled wave can have a Start Point, End Point and Loop Point. Start Point is where the S−550 starts playing the sample, and End Point is where playback ends. When you play a key, the sample playes normally until it reaches the End point then it goes back ot the Loop point and re−playes through the loop. The Looping process continues for as long as the key is pressed.



In this menu, you can set the Start Point, End Point, Loop Point, other parameters for looping and Auto Loop that opens a command window to let the S−550 detect the Loop Point itself.

FWD (Forward)

When you play a key, the sample plays until it reaches the End point, then repeats playing from the Loop point to the End point.

ALT (Alternate)

The sample playes until it reaches the End point, and repeats playing between the Loop point and the End point.

1Shot (One Shot)

The sample is played from the Start point to the End point once.

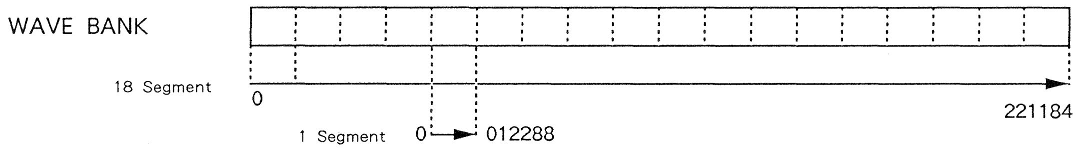
Reverse

The sample plays in a reverse direction (from the End point to the Start point) only once.

[Setting Points]

Start Point
Loop Point
End Point

The points are represented with the positions in memory. This is called Address. The beginning of the wave data is address 0. The last point of the wave of the shortest sampling time (0.4 sec at 30kHz sampling) is 012288 address. The last point of the wave data that uses the entire Wave Bank is 221184 address (7.2 seconds at 30kHz sampling).



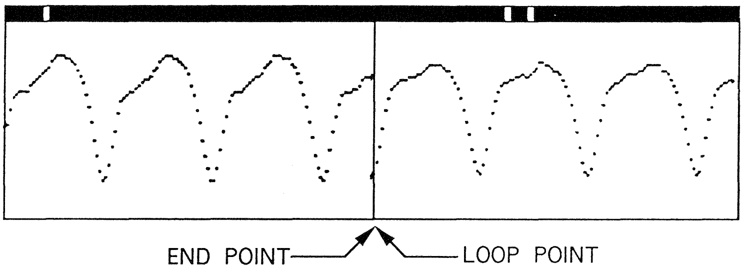
The address can be set with the Ten Key Pad or INC and DEC button or the buttons on the Mouse. How the address is actually changed by pushing the INC and DEC buttons or the buttons on the Mouse is determined by the following Search modes.

TYPE2

In this screen, you can make a loop. You can make a stable sustain sound more successfully if using the continuation of the similar waves.

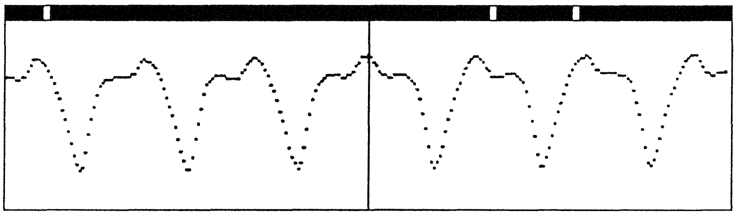
When the Loop Mode FWD (Forward) is selected, the left side of the center line shows the waveform up to the End point, and the right side shows the waveform from the Loop point. By connecting waves deftly on this line, a natural sustain sound can be obtained.

FWD



In the Loop Mode ALT (Alternate), the center line becomes the Loop point when the cursor is put on the Loop position. Therefore, you can see the waveform turned back at the Loop point. When the cursor is on the End position, the waveform is turned back at the End point. In this mode, though, looping is normally quite difficult.

ALT



e.g.) Waveform turned back at the End Point

● Auto Loop

It is possible to make the S−550's internal computer find out the Loop point and the End point of the FWD looping. This is called Auto Looping.
The Auto Loop function can find out the new Loop point and the End point between the Loop point and the End point curretnly set.

A.Loop L→E

This mode searches through the loop from the Loop point to the End point.

A.Loop L←E

This mode searches through the loop from the End point to the Loop point.

＊The Auto Loop may not be able to find a loop when the range of the loop you set is too short or the waveform is not consistant. Set the loop fairly long and try with a different loop length.

＊Auto Loop searches only the FWD loop, therefore, executing the Auto Loop automatically turns the Loop Mode to FWD.

● Initializing, Copying and Swapping Parameters

INT initializes the Parameters of the Tone currently called. COPY copies the Parameters of a source Tone to the Tone currently called. SWAP swaps the Parameters of a source Tone with the Tone currently called.

To assign the source Tone for COPY or SWAP, open the Sub Menu and call C.Source (Command Source) where you select the source Tone from the Tone List display.

Opening the command window, the Source Tone appears on the Message Line.

COPY PAGE

This copies only the parameters of the Source Tone which are shown in this Display to those of the Tone currently selected.

INT PAGE

This initializes only the parameters which are shown in this Display.

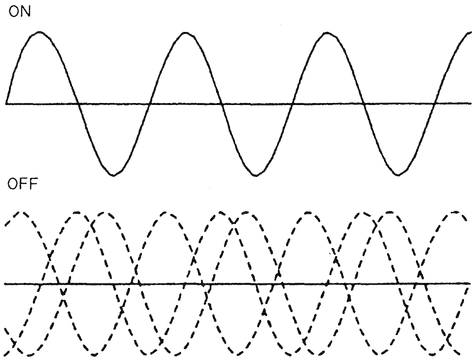
☞The default values of the parameters are shown on page 114.

Swap Page

This swaps only the parameters of the Source Tone which are shown in this Display with those of the Tone currently selected.

Sync **[On/Off]**

To start the LFO modulation at zero phase, set this to [On].



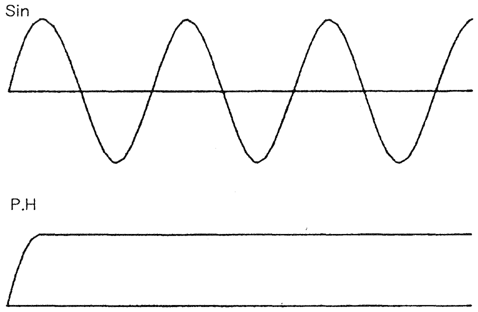
Mode

[Sin] (Sine)

Waveform of the LFO modulation is a sine wave.

[P.H] (Peak Hold)

When the LFO wave reaches its peak, it is sustained.

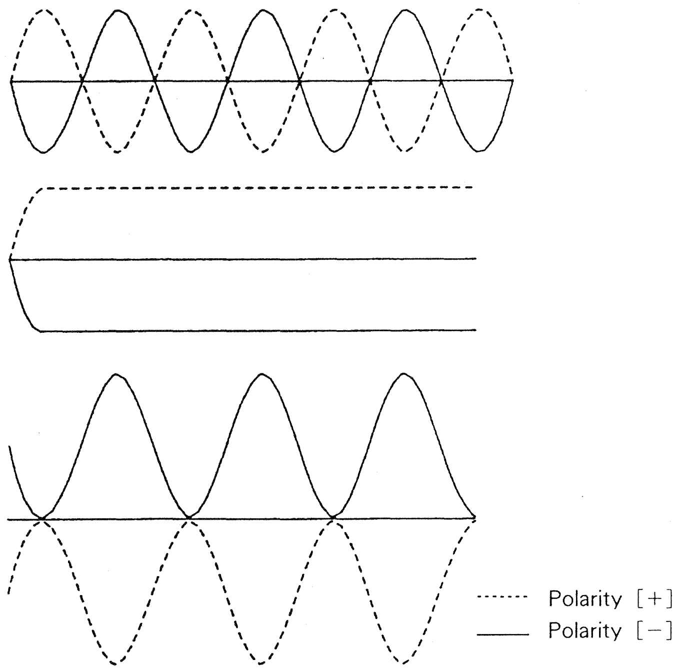


Sine

Peak Hold

Polarity [+/−]

[−] setting makes reversed wave.

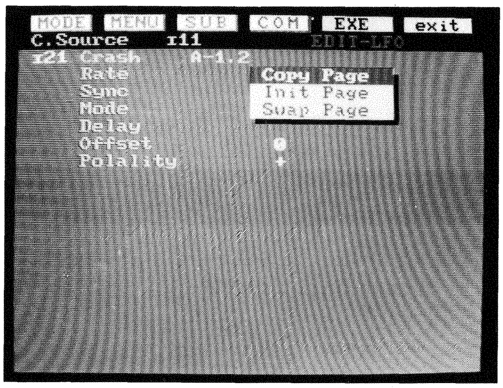


LFO Depth can be set for each Pitch modulation, TVF and TVA.

Pitch Modulation LFO Depth →Page 72
TVF LFO Depth →Page 87
TVA LFO Depth→ Page 92

[Executing the Commands]

● Initializing, Copying and Swapping Parameters

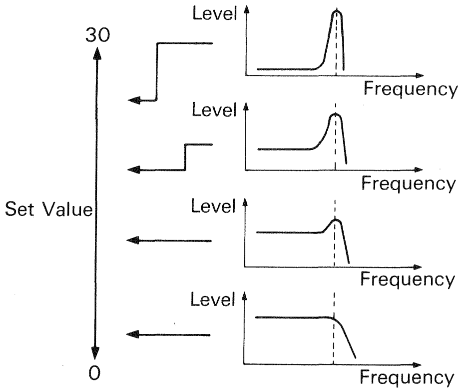


INT initializes the display's Parameters of the Tone currently called. COPY copies the Parameters of a source Tone to the Tone currently called. SWAP swaps the Parameters of a source Tone with the Tone currently called.

The contents of the Commands are exactly the same as those prepared for [Loop] menu. Refer to page 81 .

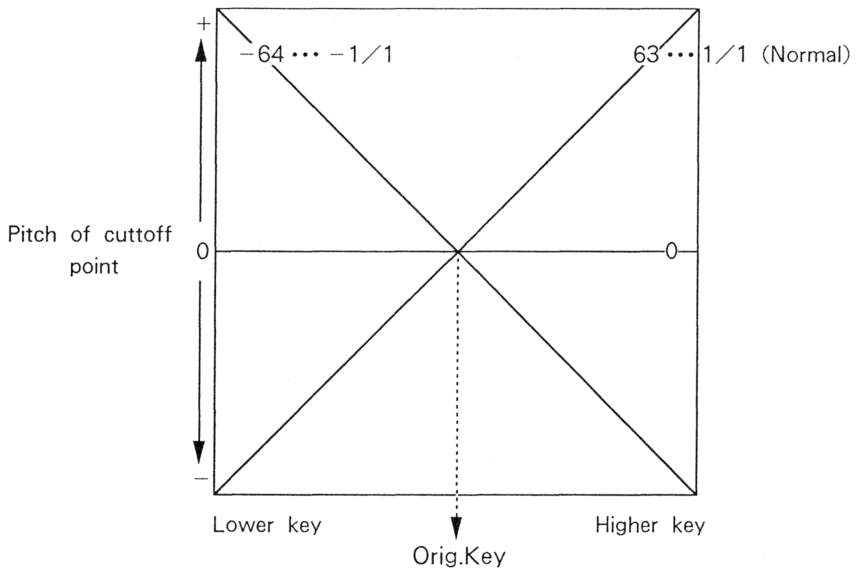
Resonance [0 to 127]

This boosts the cutoff point. As you increase the value, specific harmonics are emphasized and the sound will become more unusual, more electronic in nature.



Key Follow (of Cutoff Point)

Key Follow can change the cutoff point depending on the key played, based on the pitch of the Original key.



[TVF Modulation Control]

LFO Depth (TVF) [0 to 127]

If you wish to modulate cutoff frequencies by using the LFO, set the depth of LFO here. How the cutoff frequencies actually change is determined by [LFO] menu.

[Enlarging the Envelope Display]

Disp Zoom

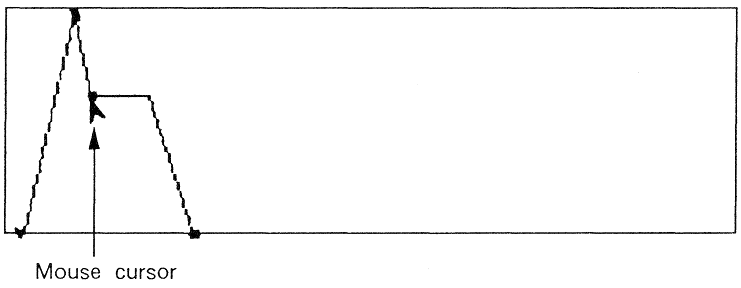
This can enlarge or diminish the envelope display in the direction of time.

[Setting Break Points with the Mouse]

Using the Mouse, you can set the Break points directly.

Preparation Set the Sustain point and End point.

Step 1 **Move the cursor to the Break point which is to be rewritten, and push the left side button on the Mouse.**



The Break point changes to red.

Step 2 **Move the cursor to the new position, and push the left side button on the Mouse again.**

If the new Break point is positioned beyond the Break points previously set, they will be moved further to the right.

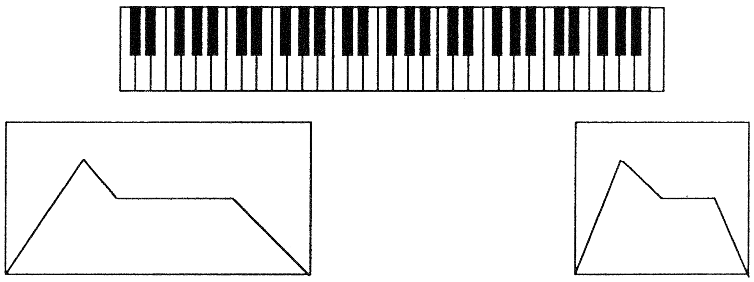
Push the right side button on the Mouse will return the Break points to the previous positions.

***The new Break point cannot be positioned to the left of an existing break point.**

***When you push the button on the Mouse to set a new Break point, the set point may be slightly different to the cursor position. This happens because the resolution is 1/128 for Level, and 1/127 for Rate.**

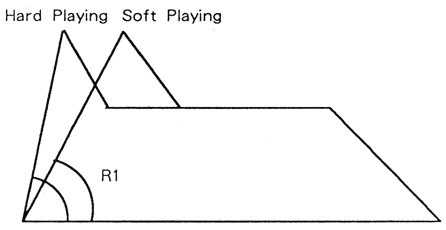
Key−Rate [0 to 127]

This can change the curve of the envelope depending on which key is played. Higher values make a steeper curve, and lower values a mild curve.



Vel−Rate (Velocity Rate) [0 to 127]

This can change R1 of the envelope curve. At higher value, the curve becomes steeper by harder playing, and at lower values, the curve is milder.



[Executing the Commands]

● Initializing, Copying and Swapping Parameters

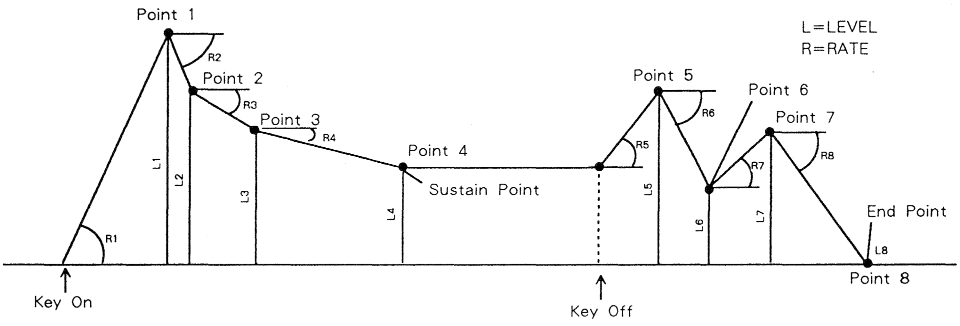
INT initializes the Parameters of the Tone currently called in the Display. COPY copies the Parameters of a source Tone to the Tone currently called. SWAP swaps the Parameters of a source Tone with the Tone currently called.

The contents of the Commands are exactly the same as those prepared for [Loop] menu. Refer to page 81.

[TVA EG Break Points]

By setting the Break point of an envelope curve, wave data can be read (played back) in defferent volumes. For instance, the attack of sound can be purposely delayed, or decaying effect can be added to a loop. However, the volume of the sampled sound is the maximum, therefore, it is not possible to make the attack quicker than the sampled waveform, or increases the volume, or sustain the one-shot sound.

Up to eight break points (rates and levels) can be set for making an envelope curve that controls the cutoff point of the Lowpass filter.



Rate **[1 to 127]**

This is a slide from a break point to the next one. Higher values make steeper slope.

Level **[0 to 127]**

This sets the level of a break point.

SUS (Sustain Point)

This sets the level to be sustained until the key is released.

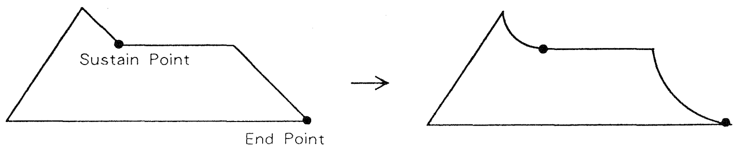
***It is not possible to set this after the end point.**

END (End Point)

This is the end of the curve.

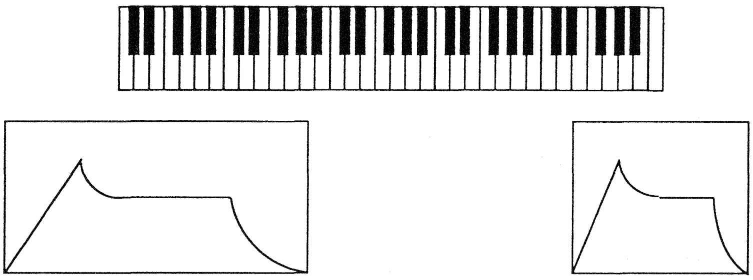
***It is not possible to set this before the sustain point.**

***The Rate before the Sustain point and End point actually draws an exponential curve.**



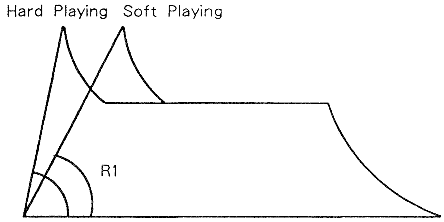
Key–Rate **[0 to 127]**

This can change the curve of the envelope depending on which key is played. Higher values make a steeper curve, and lower values a mild curve.



Vel–Rate (Velocity Rate) **[0 to 127]**

This can change R1 of the envelope curve. At higher value, the curve becomes steeper by playing harder, and at lower values, the curve is milder.



(Level Curve : 0)

[Executing the Commands]

● Initializing, Copying and Swapping Parameters

INT initializes the Parameters of the Tone currently called in the Display. COPY copies the Parameters of a source Tone to the Tone currently called. SWAP swaps the Parameters of a source Tone with the Tone currently called.

The contents of the Commands are exactly the same as those prepared for [Loop] menu. Refer to page 81.

[Patch Play with the Tone Map]

Type (Type for Playing) **[P/T]**

[**P**] (Patch) type allows you to play the Patch currently called and edit it.

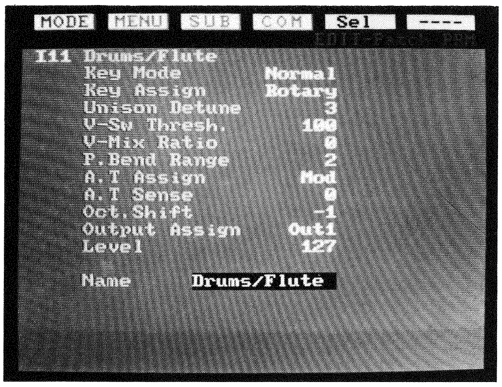
When a key is played, an arrow lights up on the value of the Tone (s) assigned to that key. Depending on the direction of the arrow, you can tell which of the 1st or 2nd Tone is indicated.

➡ C 5	··· 1st Tone assigned to the KEY−ON key.
D # 5 ⬅	··· 2nd Tone assigned to the KEY−ON key.

[**T**] (Tone) type allows you to actually play the Tone which is now indicated with the cursor, and edit it.

Patch PRM

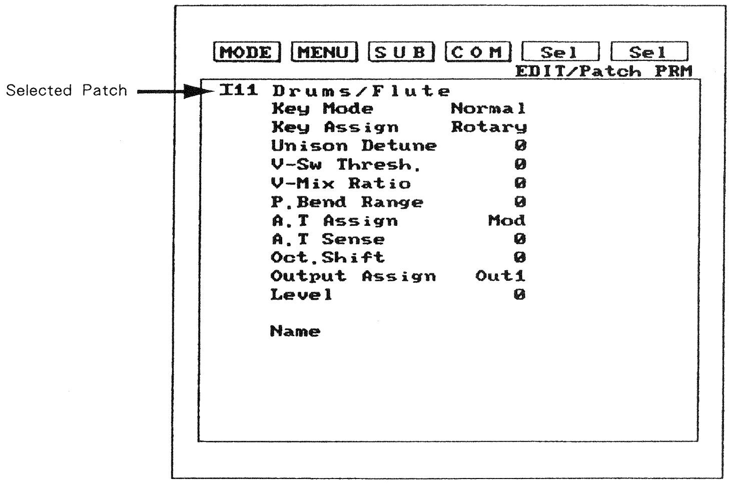
In this menu, you can set the controlling performance parameters of a Patch, and open a command window for copying or swapping parameters, or initializing.



Preparation 1 **Push the Edit Button, or open the Mode Menu and select EDIT, to select the Edit mode.**

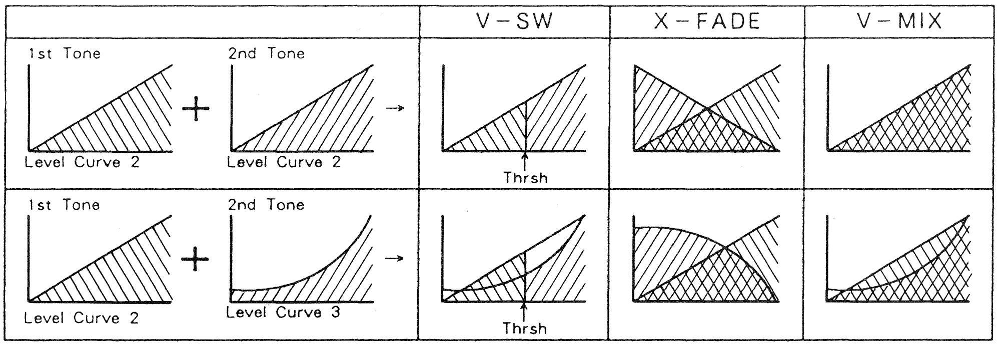
Preparation 2 **Open the Menu Window and select [Patch PRM].**

[Calling a Patch]



The Patch currently selected is shown at the upper left corner of the Display. If you wish to call a different Patch, change the numbers.

***Open the Sub Menu and select E.Source, then select a Patch to be edited. Opening the Sub Menu will show the Patch List Display which you can watch for selecting the Patch to be edited.**



Key Assign **[Rotary/Fix]**

When the S-550 receives a sequence of Note messages, it plays different voice modules sequentially. However, if set to [Fix], the S-550 plays the same module only when receiving the Note messages of the same number. In the other words, [Fix] plays the next sound without remaining the previous decaying sound, therefore can be effective for creating the nuance of percussive trill effect.

Unison Detune **[-50 to 50]**

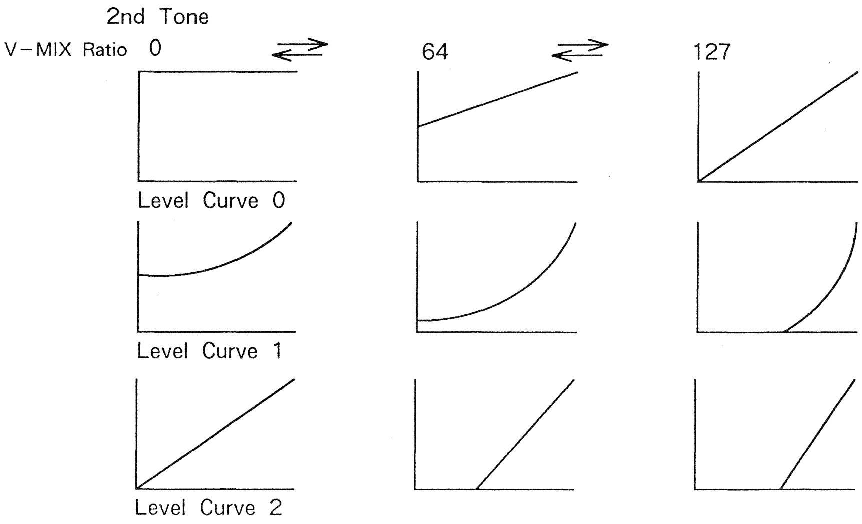
When the Unison Key Mode is selected, one of the sounds can be slightly detuned. 50 is roughly half of a semi-tone.

V-SW Thresh (Velocity Switch Threshold) **[0 to 127]**

When the V-SW Key Mode is selected, this determines the threshold level for the two Tones. Higher values require harder playing to sound a different Tone.

V-MIX Ratio (Velocity Mix Ratio) **[0 to 127]**

When the V-MIX Key Mode is selected, the level curve of the 2nd Tone can be changed as shown in the picture. At 127, the volume obtained is exactly as in the set level curve.



A.T. Sense (Aftertouch Sensitivity) **[0 to 127]**

This sets the sensitivity of the aftertouch effect. At 127, the effect is at its maximum.

Oct Shift (Octave Shift) **[−2, −1, 0, 1, 2]**

This can shift the pitch of the entire keyboard from −2 to 2 octaves in an ooctave step.

Output Assign (Assignment of the Output Jacks) **[Out 1 to Out 8, Tone]**

[Out 1] to [Out 8] : The Patch currently in use is sent out from the selected output jack (1 to 8).

[Tone] : Tones are sent out from the output jacks separately as set with the relevant Tone Parameter in each Tone.(Page 73)

***In the [Tone] mode, the maximum number of voices to be output is decreased, causing sound missing.**

***This Patch Parameter can be edited even in the Play mode.**

Level (Patch Level) **[0 to 127]**

This can set the output level of each Patch separately. At 127, each Tone assigned to the Patch is played at its set level.

Name (Patch Name)

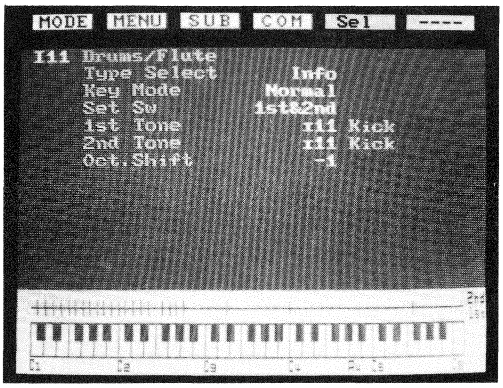
Up to 12 letters can be used for naming a Patch.

***You can use the Ten Key Pad instead of the Mouse. Pushing a Number key will call a letter in the sequence as shown below.**

1	→A→B→C	7	S→T→U→
2	→D→E→F	8	→V→W→X
3	→G→H→I	9	→Y→Z→/
4	→J→K→L	0	→+→−→×
5	→M→N→O	ENT	Space
6	→P→Q→R		

Split

Tones in each Patch can be assigned to the Note Numbers you like.



Preparation 1 **Push the Edit Button, or open the Mode Menu and select EDIT, to select the Edit mode.**

Preparation 2 **Open the Menu Window and select [Patch Split].**

[Calling a Patch to be edited]

The Patch currently selected is shown at the upper left corner of the Display. If you wish to call a different Patch, change the numbers.

***Open the Sub Menu and select E.Source, then select a Patch to be edited. Opening the Sub Menu will show the Patch List Display which you can watch for selecting the Patch to be edited.**

[Split Set or Monitor]

Type Select **[Info/Set]**

If you wish to monitor the Tone assignment to the Note numbers you have made, select [Info], and to actually assign Tones to Note numbers, select [Set].

[Tone Assignment]

When [Set] Type is selected, you can actually assign the Tones (1st and 2nd Tones) to each key.

Set Sw **[1st&2nd, 1st, 2nd, Off]**

Two Tones, the 1st and 2nd Tones are assigned to each key. To change the assignment of both Tones, select [1st&2nd], to change only the 1st Tone, select [1st], and to change only the 2nd Tone select [2nd]. When [Off] is selected, no sound is heard.

1st Tone **[I 11 to II 48]**

Call the 1st Tone to be assigned in the Display.

2nd Tone **[I 11 to II 48]**

Call the 2nd Tone to be assigned in the Display.

○Assigning the Tone by receiving Key On messages

When the Key On messages are received, the Tone is assigned to the corresponding Key number. When a MIDI keyboard is connected, the Tone is assigned to the keys pressed, sound of the new Tone just assigned is heard.

○Assigning the Tone by indicating the key in the Display with Mouse

Indicate the key in the Display with the Mouse, then push the left side button on the Mouse, and the tone is assigned to that key.

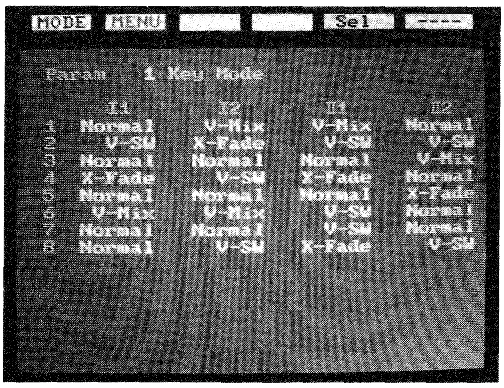
[Octave Shift of the Display]

Oct Shift **[−2, −1, 0, 1, 2]**

The S−550 can be played from C0 to C9.(The highest pitch, however, is two octave above the Original Key). When the keyboard is in the normal condition (without OCTAVE SHIFT), the pitch range of the keyboad is C2 to C7. Using the Octave Shift function, you can shift the keyboard up to ±2 octaves.

Patch Map

In this menu, you can call each one of the Patch Parameters and set the values.



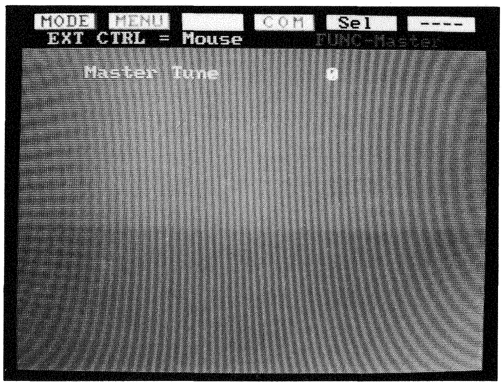
Preparation 1 **Push the Edit Button, or open the Mode Menu and select EDIT, to select the Edit mode.**

Preparation 2 **Open the Menu Window and select [Patch Map].**

Call the parameter you wish to edit in the Display, then move the cursor to the value of the parameter and change it.

1 Key Mode
2 Key Assign
3 Unison Detune
4 V-Sw Thresh
5 V-Mix Ratio
6 P. Bend Range
7 A.T Assign
8 A.T Sense
9 Output Assign
10 Level

Master



Preparation 1 Push the FUNC button, or open the Mode Menu and select FUNC, to call the Func mode.

Preparation 2 Open the Menu Window and select [Master].

[Setting the Master Tune]

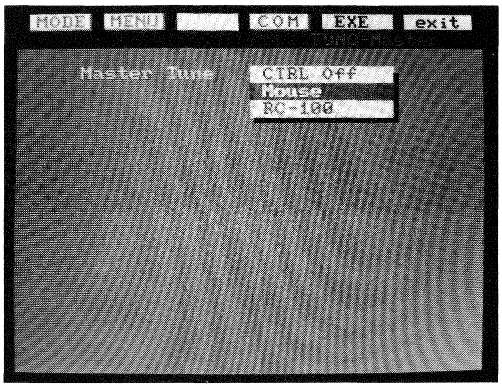
Master Tune [−50 to 0 to 50]

This does the overall tuning of the S−550. At zero, the pitch of the sound is exactly the same as set with the relevant Tone Parameters.

[Selecting the Controller Mode]

The S−550 can be controlled with the buttons on the panel, the supplied Mouse or the optional controller RC−100. Depending on the controller you use, the functions to be used on the S−550 differ. Therefore, it is necessary to set the appropriate Controller mode depending on which of the controllers you use.

To use the Mouse or RC−100, open the Command Window, then connect the unit to the S−550. Also, when changing the connected devices, such as disconnecting the Mouse for connecting the RC−100, be sure to open the Command Window before changing connections.



The Command Window shows the following commands.

■ When connecting the RC−100 to the S−550

[RC−100]

Step 1 Select [RC−100].

The Display shows "Connect RC−100 to EXT CTRL. And push RESET On RC−100".

Step 2 Connect the RC−100 to the EXT CTRL Jack.

Step 3 If you wish to use the Mouse, connect the supplied Mouse to the EXT CTRL jack on the RC−100.

*Do not connect or disconnect the Mouse while the RC−100 is being operated.

Step 4 Push the RESET button.

Step 5 Push the EXECUTE button on the S−550 (the Command Window closes), and the S−550 can be controlled with the RC−100.

NOTE

If the [Mouse] or [RC−100] mode is selected but neither of the Mouse or RC−100 is connected to the S−550, the S−550 does not operate properly with the buttons on its panel.

It is possible to perform this Controller mode selection at power−up. See page 23.

The following commands are prepared for selecting which parameters are to be initialized.

[Init Patch I]

This initializes all the parameters in Block I.

[Init Patch II]

This initializes all the parameters in Block II.

[Init FUNC]

This initializes the parameters set in the Function mode.

[Init MIDI]

This initializes the parameters set in the MIDI mode.

Message

In this menu, you can set how the MIDI messages in each voice group are received by the S-550.

Preparation 1 **Push the MIDI button, or open the Mode Menu and select MIDI to select the MIDI mode.**

Preparation 2 **Open the Menu Window and select [Tone PRM].**

[Setting MIDI Recieve Channel]

RX-CH (Receive Channel) **[1 to 16, Off]**

This sets the receive channel. When set to [Off], no MIDI message is received. This Parameter can be set in the Play mode.

[MIDI Receive Switch]

P.Chg (Program Change) **[On/Off]**

This selects whether to receive the Program Change messages or not.

***When this is set to [On], the Program Change messages sent from an external device select Patches on the S-550. How the Patch numbers correspond with the Program Change numbers can be set in [Prog #] menu.**

Bender **[On/Off]**

This selects whether to receive the Bender messages or not.

Bend Ragne **[On/Off]**

This selects whether to receive the Bend Range (Control Change RPC No.0) messages or not.

Mod.(Modulation) **[On/Off]**

This selects whether to receive the Modulation (Control Change No. 1) message or not.

Prog. Number

This sets how each Program Change number corresponds to a Patch number from 1 to 128.

Preparation 1 Push the MIDI button, or open the Mode Menu and select MIDI to select the MIDI mode.

Preparation 2 Open the Menu Window and select [Prog #].

***Be careful not to assign the same Program Change number to more than one Patch. If so, the smaller Patch number in Block I will be given priority.**

8 Loading Data From a Disk

The Disk mode allows you to load the data saved on a disk into the S−550, or call the directory of the data stored on the disk.

Load (Loading the entire data) (Page 122)

Load P. PRM (Loading a Patch) (Page 126)

Load Tone (Loading a Tone) (Page 128)

DIR Patch (Directory of Patch Names on a disk) (Page 130)

DIR Tone (Directory of Tone Names on a disk) (Page 130)

Executing the Chain Load

Step 1 **Insert a disk that contains the data to be loaded into Block I.**

Step 2 **Select [Load Chain], then push the EXECUTE button or the left side button on the Mouse.**

"**NOW LOADING**" is shown on the Message Line, and the disk label of the disk which is currently being loaded is shown in the middle of the Display.

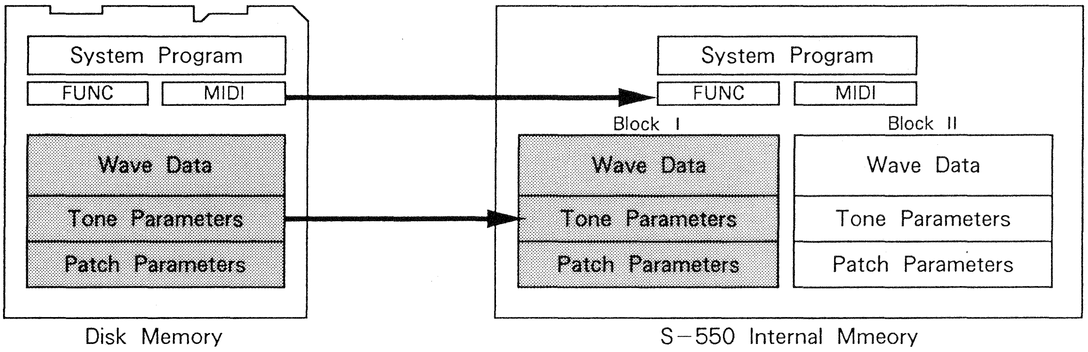
When the number counts down to 00, and "**Change Next Disk**" is shown on the Message Line, push the Eject Button and remove the disk, then insert the disk that contains the data to be loaded into Block II.

***If you wish to stop loading here, push the COMMAND button on the S−550.**

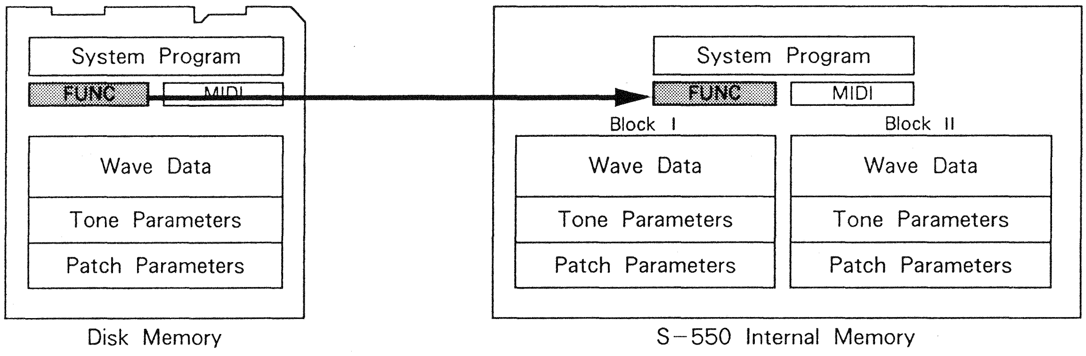
Inserting the disk will automatically starts loading, and "**Now Loading**" is shown on the Message Line. The disk label of the disk which is currently being loaded is shown in the middle of the Display.

When the number counts down to 00, and "**Completed**" is shown on the Message Line, loading is completed.

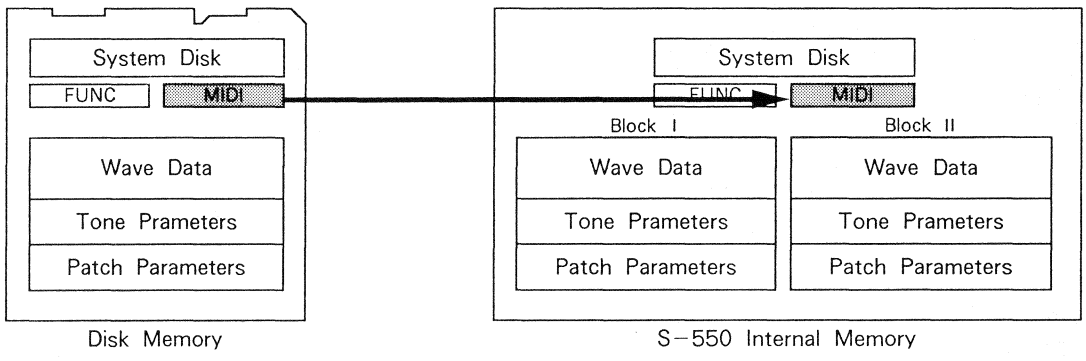
Load Set I This loads the entire data of one disk. Block data is read into Block I.



Load Func This loads only Function data (Parameters set in the Play and Func mode) of a disk.



Load MIDI This loads only MIDI data (Parameters set in the MIDI mode).



Executing Loading

Step 1 **Insert the disk that contains the data to be loaded.**

Step 2 **Select the Command you wish to execute, then push the EXECUTE button or the left side button on the Mouse.**

"**Now Loading**" is shown on the Message Line.

When Block data is being loaded, the disk label of the disk which is currently being loaded is shown in the middle of the Display.

When the number counts down to 00, and "**Complete**" is shown on the message line, loading is completed.

Internal

This parameter assigns to which Patch Number the source Patch is to be loaded.

***Opening the Sub Menu will show the Patch List of the internal memory which you can watch for selecting a destination Patch number.**

Step 1 **Insert a disk into the Disk Drive.**

Step 2 **Open the Command Window, then push the EXECUTE button or the left side button on the Mouse.**

When finished, "**Complete**" is shown on the message line.

Internal

This selects a Tone number where the loaded data is to be written. Any of the 64 Tone numbers can be selected.

If a Sub Tone is selected as a destination, the edited Wave is written into it, and it therefore becomes an Original Tone.

When an Original Tone is selected as a destination, the following will occur in the S−550.

○The previous Wave data is erased making a space (=increasing the Remaining Time)

○Edited Wave data is written into the empty space in the selected Wave Bank.

○A Sub Tone that uses the erased Wave data is deleted, becoming an unused Tone.

[Selecting a Wave Bank of the Destination Tone]

Wave Bank [A/B]

The new Wave Data is written in the Wave Bank of the same Block as the selected destination Tone. Here, select Bank A or B.

[Checking the Remaining Space for Writing]

When there is no space left for sampling in the destination Wave Bank, "**Not Execute**" is shown when you try to execute, and writing cannot be executed. When the remaining space is unsufficient for sampling, the excess will be ignored, therefore the Wave data will be cut.

***The remaining time of each Wave Bank is shown in seconds at a 30kHz sampling frequency. When sampling in 15kHz, multiply it by 2.**

***If there is not enough space, you should delete some unneeded data to increase the remaining time. You may either delete a Tone with [DELETE] in the EDIT mode, or cut off unneeded portions of a wave with [TRUNCATE] in the Utility mode.**

Step 1 Insert a disk into the Disk Drive.

Step 2 Open the Command Window, then push the EXECUTE button or the left side button on the Mouse.

When finished, "**Complete**" is shown on the message line.

[9] Saving

The data written in the internal memory of the S−550 can be saved onto a disk.

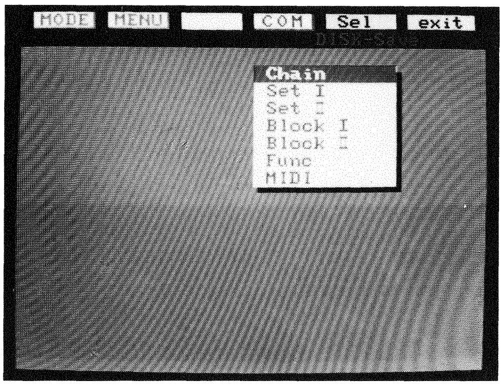
Label Set (Setting the Disk Label)	(Page **132**)
Save (Saving the entire data)	(Page **133**)
Save P. PRM (Saving a Patch)	(Page **137**)
Format (Formatting a Disk)	(Page **139**)
Backup (Backup)	(Page **140**)
Save SYS (Saving the System only)	(Page **142**)

The Protect Tab on a disk serves to protect the data from accidental erasure. To save data onto a disk, be sure to set the tab to the WRITE position first. Then insert it into the disk drive. When the Protect Tab is set to the PROTECT position, the data cannot be saved. After saving is completed, be sure to return the tab to the PROTECT position.

A brand new floppy disk, or a disk being used for any device other than the S−550, should be formatted (initialized) first, then save the data. Otherwise, the data cannot be saved.

Save

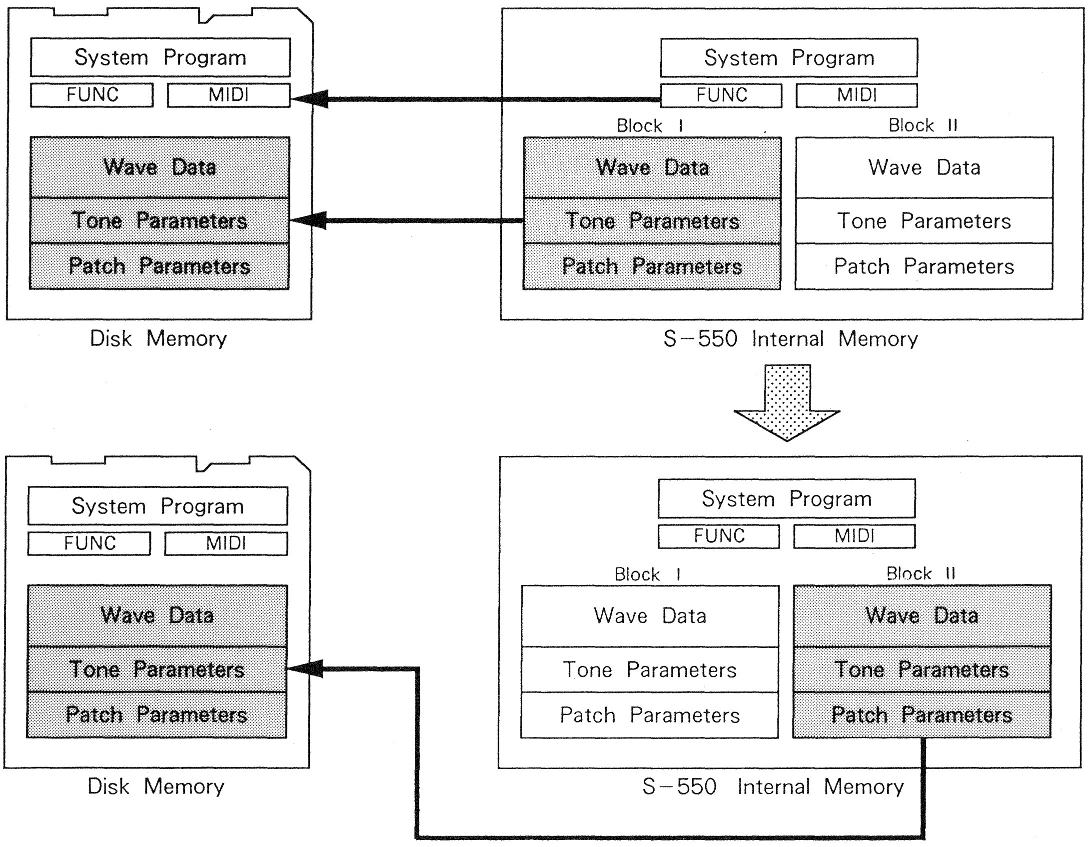
The entire sound data in the internal memory of the S−550 can be saved onto a disk.



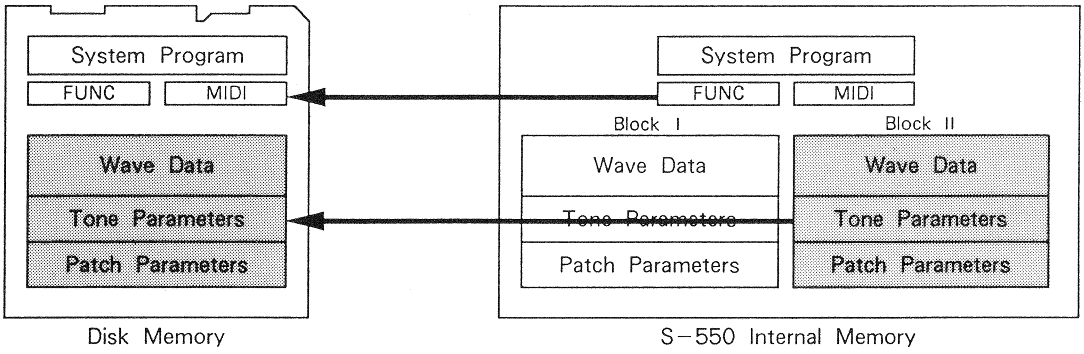
Preparation 1 **Push the DISK button, or open the Mode Menu and select DISK, to call the Disk mode.**

Preparation 2 **Open the Menu Window and select [Save].**

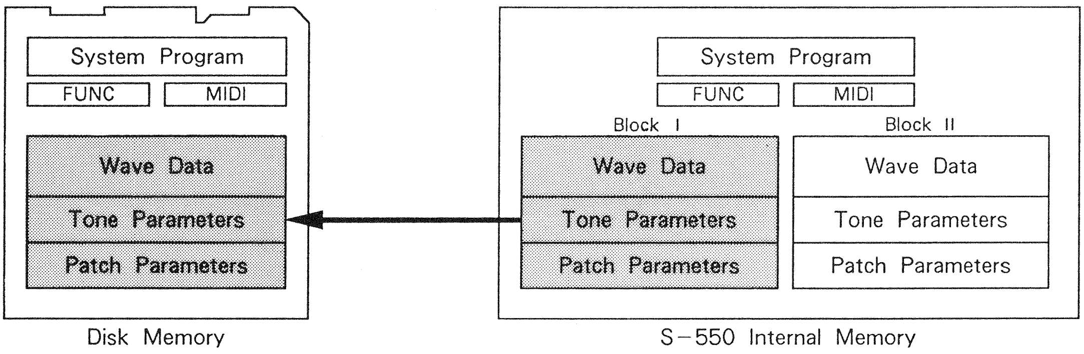
Save Chain This can save two disks continuously to the S−550.



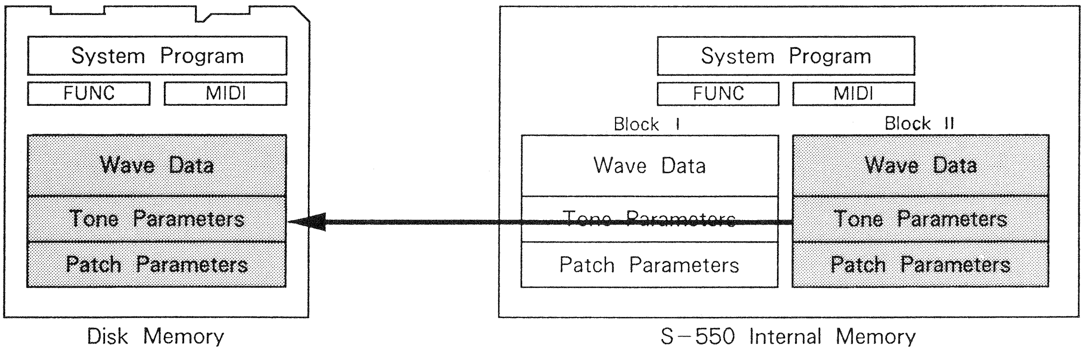
Save Set II This saves Block II data, Function and MIDI data onto a disk.



Save Block I This saves Block I data onto a disk.

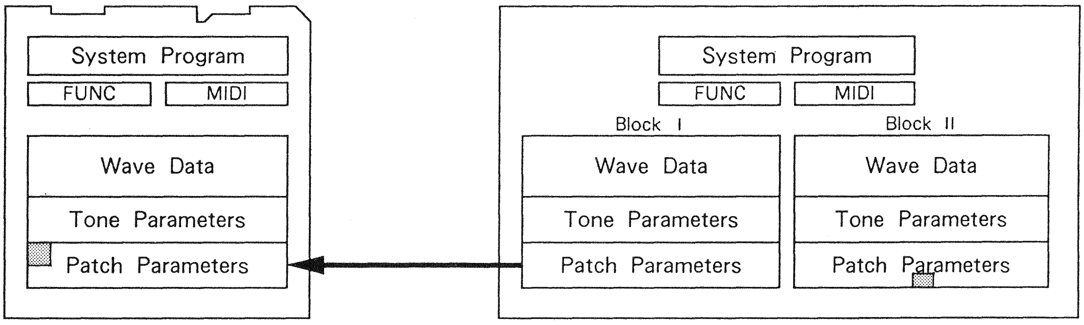


Save Block II This saves Block II data onto a disk.



Save P. PRM

Any Patch (=only Patch Parameters) in the internal memory can be saved onto a disk.

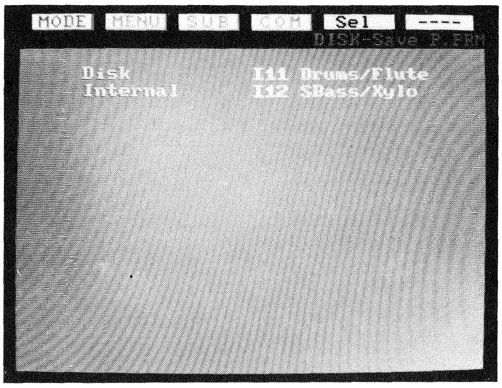


Disk Memory

(Selecting the Source Patch Number)

S−550 Internal Memory

(Selecting the Destination Patch Number)



Preparation 1 **Push the DISK button, or open the Mode Menu and select DISK, to call the Disk mode.**

Preparation 2 **Open the Menu Window and select [Save P . PRM] to open the Command Window.**

Internal

This parameter assigns the source Patch Number which is to be saved onto a disk.

***Opening the Sub Menu will show the Patch List of the internal memory which you can watch for selecting a Patch number.**

Step 1 **Set the Protect Tab on the disk to the WRITE position, then insert it in the Disk Drive.**

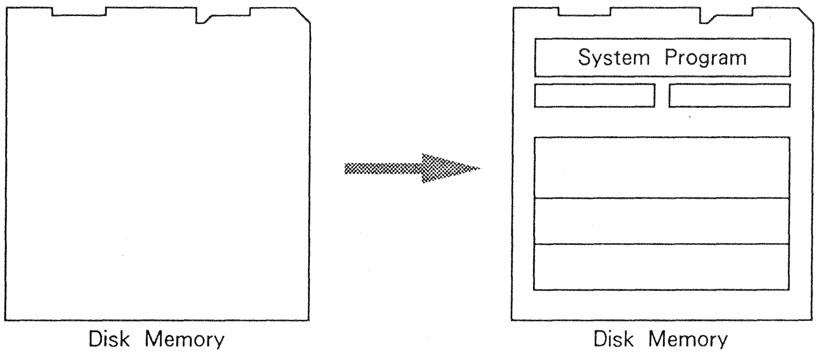
Step 2 **Open the Command Window, then push the EXECUTE button or the left side button the Mouse.**

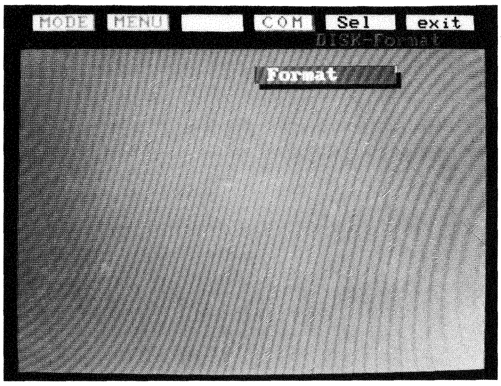
When finished, "**Complete**" is shown on the message line.

Format

This format the disk for the S−550, and saves the system program loaded in the internal memory of the S−550.

The data in the S−550 cannot be saved onto a brand new disk, or a disk which has been used for a device other than the S−550, unless it is formatted.





Preparation 1 **Push the DISK button, or open the Mode Menu and select DISK, to call the Disk mode.**

Preparation 2 **Open the Menu Window and select [Format] to open the Command Window.**

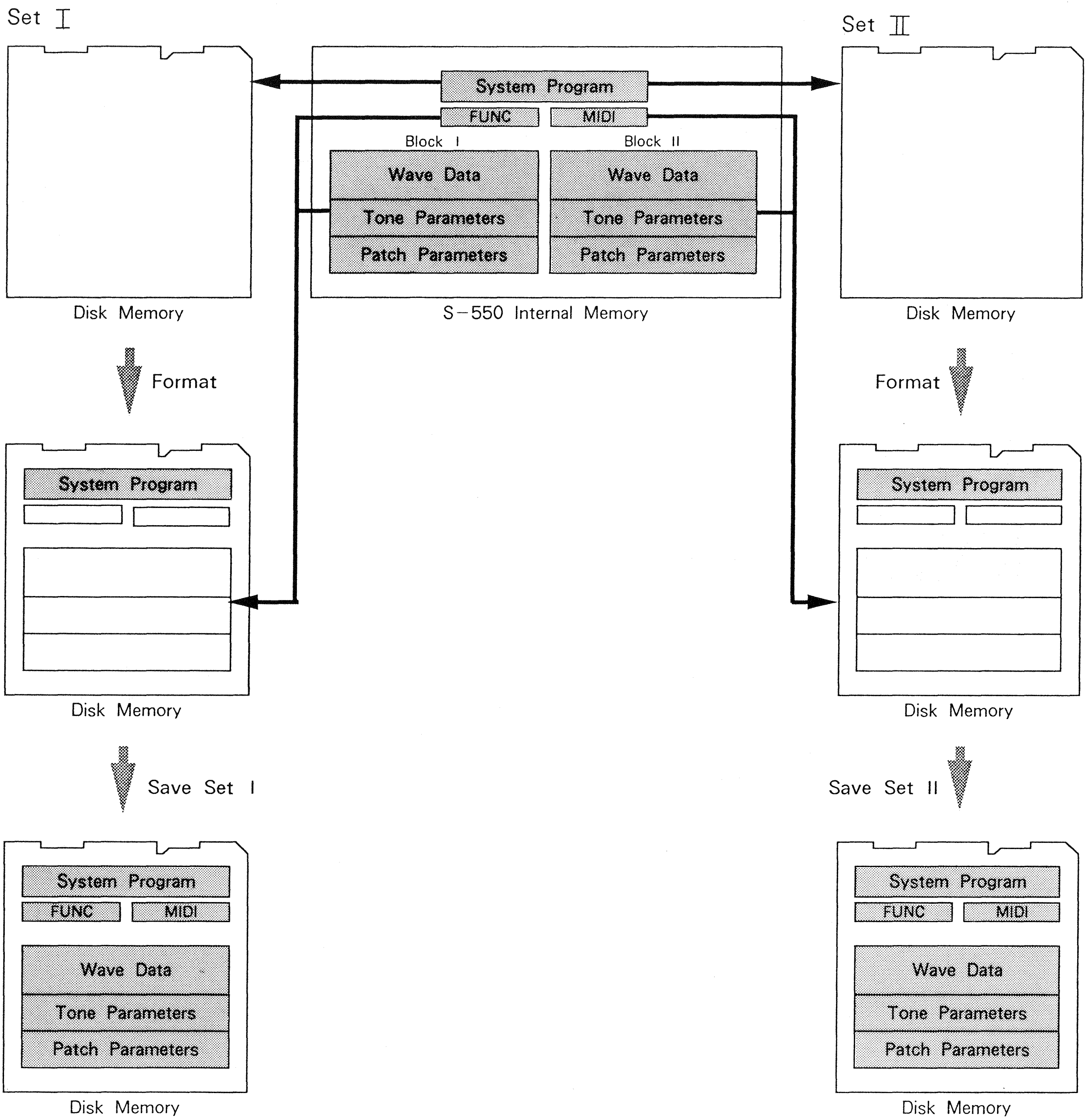
***The S−50's disk can be converted to S−550 disk with the Convert Disk function (see page 147).**

Step 1 **Set the Protect Tab on the disk to the WRITE position, then insert it in the Disk Drive.**

Step 2 **Open the Command Window, then push the EXECUTE button or the left side button on the Mouse.**

"Formatting" is shown on the message line.

When it counts down to 00, and "**Complete**" is shown, FORMAT is completed.


Set I
Set II
System Program
FUNC
MIDI
Block I
Block II
Wave Data
Tone Parameters
Patch Parameters
Disk Memory
S-550 Internal Memory
Format
System Program
Save Set I
Save Set II

10 Other Useful Functions

Trig. Play (Audio Trigger Play) (P.144)

UTL. Backup (Backup of the Utility Disk) (P.145)

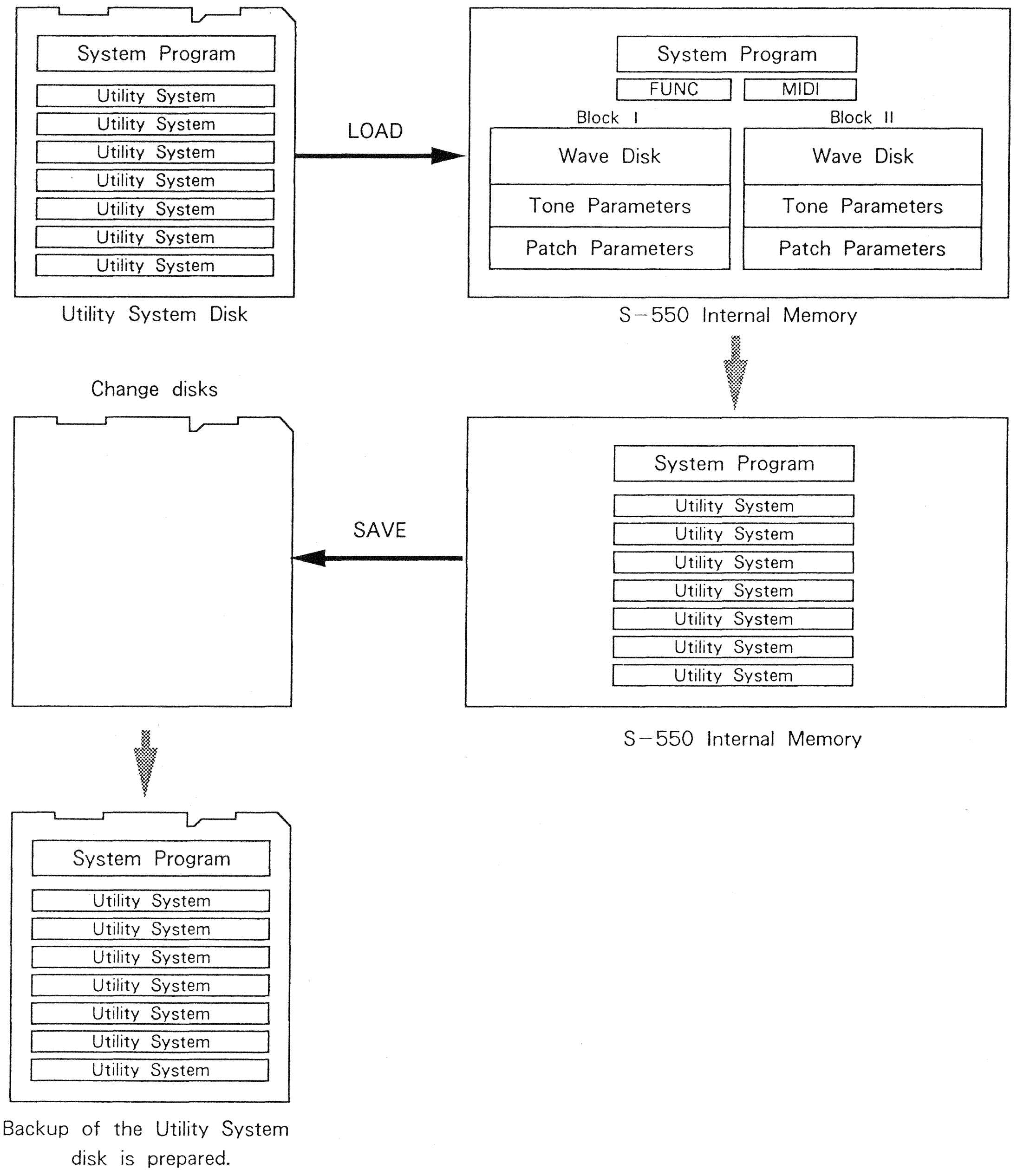
Convert (Converting Data of the S−50 for the S−550) (P.147)

Change SYS (Change System) (P.149)

UTL. Backup

The entire data on the Utility disk can be copied to make a backup.

***The Utility Backup will erase any data stored in the internal memory of the S−550. If you wish to retain the data, save it onto a disk before doing the Utility Backup.**



Convert

Using the Convert Load function of the S−550, data on a S−50 disk can be loaded into the S−550.

The Convert Disk function can convert a S−50 disk into a S−550 disk.

Preparation 1 **Insert the Utility disk into the Disk Drive.**

Preparation 2 **Push the UTILITY button, or open the Mode Menu and select UTIL, to call the Utility mode.**

Preparation 3 **Open the Menu Window, and select [Convert] to open the Command Widow.**

Conv. Disk (Convert Disk)

This updates a disk for the S−50 to the S−550.

***The converted disk cannot boot the S−50 any longer.**

Step 1 **Insert the S−50 disk to be converted into the disk drive with the Protect Tab set to the WRITE position.**

Step 2 **Push the EXECUTE button or the left side button on the Mouse for executing CONVERT DISK.**

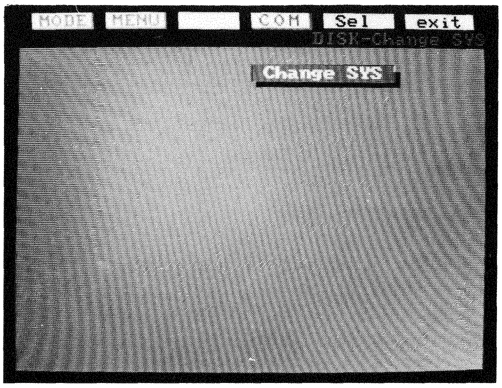
***When the disk is for other than S−50, the Display shows "Insert S−50 Disk".**

"**Working**" is shown on the Message Line.

When finished, "**Complete**" is shown on the Message Line.

Change System

This replaces the system program loaded in the internal memory with the program of a different software, leaving sound data intact.



Step 1 Push the DISK button, open the Mode Menu and select DISK, to call the DISK mode.

Step 2 Open the Menu Window, and select [Change SYS], to open the Command Window.

Step 3 Push the EXECUTE button or the left side button on the Mouse.

DIGITAL SAMPLER
MODEL S-550

MIDI Implementation Chart

Date : Sep. 9. 1987
Version : 1.00

Function...		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	X X	1-16 *4 1-16 *4	*2
Mode	Default Messages Altered	X X *********	3 X X	
Note Number	True Voice	X *********	12-120 12-120	*3
Velocity	Note ON Note OFF	X X	*1 X	V=1-127
After Touch	Key's Ch's	X X	X *1	
Pitch Bender		X	*1	
Control Change	1 7 64	X X X	*1 *1 *1	Modulation Volume Hold 1
	100, 101 6, 38		*1	RPC LSB, MSB DATA Entry LSB, MSB Number-0 Pitch Bend Sensitivity
Prog Change	True #	 *********	*1 0-127 0-127	*3
System Exclusive		*1	*1	
System Common	Song Pos Song sel Tune	X X X	X X X	
System Real Time	Clock Commands	X X	X X	
Aux Message	Local ON/OFF All Notes OFF Active Sense Reset	X X X X	X O (123-127) X X	
Notes		*1 Can be set to O or X manually, and memorized by disk. *2 Memorized by disk. *3 Patch numbers for each program change number can be set freely. *4 MIDI Channel of each voice group can be set in Multi Channel Mode.		

Mode 1 : OMNI ON, POLY　　Mode 2 : OMNI ON, MONO　　O : Yes
Mode 3 : OMNI OFF, POLY　　Mode 4 : OMNI OFF, MONO　　X : No

*The size of the requested data does not indicate the number of bytes that will make up a DT1 message, but represents the address fields where the requested data resides.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The same number of bytes comprises address and size data, which, however, vary with the Model-ID.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Data set 1 : DT1 (12H)

This message corresponds to the actual data transfer process. Because every byte in the data is assigned a unique address, a DT1 message can convey the starting address of one or more data as well as a series of data formatted in an address - dependent order.

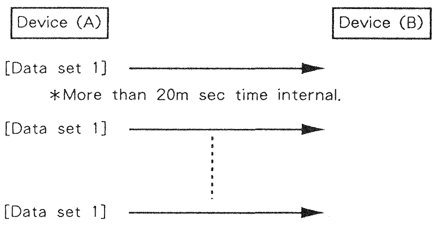
The MIDI standards inhibit non-real time messages from interrupting an exclusive one. This fact is inconvenient for the devices that support a "soft-through" mechanism. To maintain compatibility with such devices, Roland has limited the DT1 to 256 bytes so that an excessively long message is sent out in separate segments.

Byte	Description
F0H	Exclusive
41H	Manufactures ID (Roland)
DEV	Device ID
MDL	Model ID
12H	Command ID
aaH	Address MSB
:	:
	LSB
ddH	Data
:	:
sum	Check sum
F7H	End of exclusive

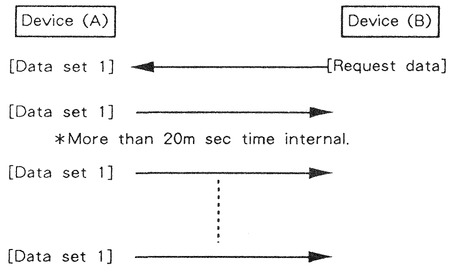
*A DT1 message is capable of providing only the valid data among those specified by an RQ1 message.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The number of bytes comprising address data varies from one Model-ID to another.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Example of Message Transactions

● Device A sending data to Device B
Transfer of a DT1 message is all that takes place.



● Device B requesting data from Device A
Device B sends an RQ1 message to Device A. Checking the message, Device A sends a DT1 message back to Device B.



4. Handshake-Transfer Procedure

Handshaking is an interactive process where two devices exchange error checking signals before a message transaction takes place, thereby increasing data reliability. Unlike one-way transfer that inserts a pause between message transactions, handshake transfer allows much speedier transactions because data transfer starts once the receiving device returns a ready signal.

When it comes to handling large amounts of data--sampler waveforms and synthesizer tones over the entire range, for example--across a MIDI interface, handshaking transfer is more efficient than one-way transfer.

Types of Messages

Message	Command ID
Want to send data	WSD (40H)
Request data	RQD (41H)
Data set	DAT (42H)
Acknowledge	ACK (43H)
End of data	EOD (45H)
Communication error	ERR (4EH)
Rejection	RJC (4FH)

Want to send data : WSD (40H)

This message is sent out when data must be sent to a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of the data to be sent.

On receiving a WSD message, the remote device checks its memory for the specified data address and size which will satisfy the request. If it finds them and is ready for communication, the device will return an "Acknowledge (ACK)" message.
Otherwise, it will return a "Rejection (RJC)" message.

Byte	Description
F0H	Exclusive status
41H	Manufactures ID (Roland)
DEV	Device ID
MDL	Model ID
40H	Command ID
aaH	Address MSB
:	:
	LSB
ssH	Size MSB
:	:
	LSB
sum	Check sum
F7H	End of exclusive

*The size of the data to be sent does not indicate the number of bytes that make up a "Data set (DAT)" message, but represents the address fields where the data should reside.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The same number of bytes comprises address and size data, which, however, vary with the Model-ID.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Rejection : RJC (4FH)

This message is sent out when there is a need to terminate communication by overriding the current message. An RJC message will be triggered when :

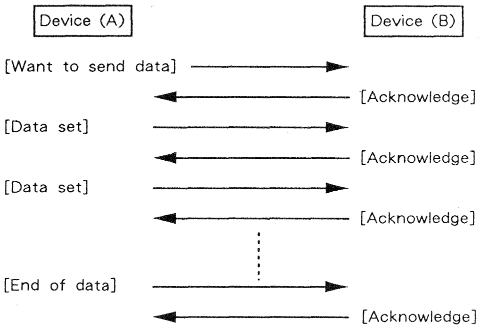
- a WSD or RQD message has specified an illegal data address or size,
- the device is not ready for communication.
- an illegal number of addresses or data has been detected.
- data transfer has been terminated by an operator.
- a communications error has occurred.

An ERR message may be sent out by a device on either side of the interface. Communication must be terminated immediately when either side triggers an ERR message.

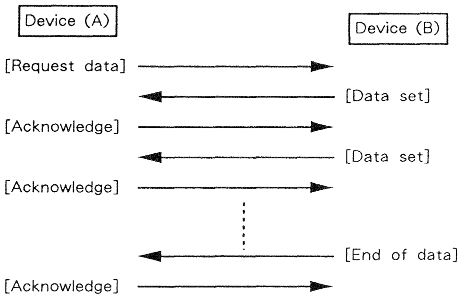
Byte	Description
F0H	Exclusive status
41H	Manufactures ID (Roland)
DEV	Device ID
MDL	Model ID
4FH	Command ID
F7H	End of exclusive

Example of Message Transactions

● Data transfer from device (A) to device (B).

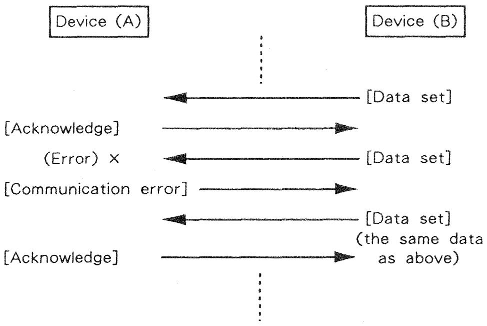


● Device (A) requests and receives data from device (B).

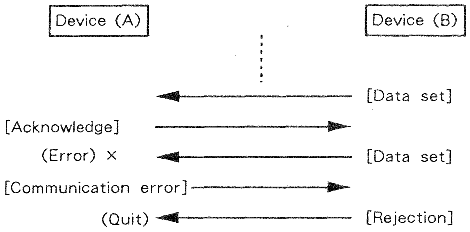


● Error occurs while device (A) is receiving data from device (B).

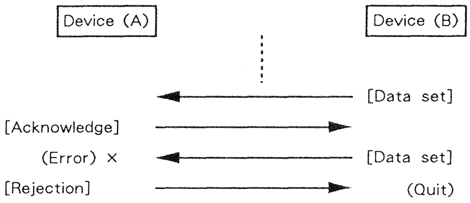
1) Data transfer from device (A) to device (B).



2) Device (B) rejects the data re−transmitied, and quits data transfer.



3) Device (A) immediately quits data transfer.



3. EXCLUSIVE COMMUNICATIONS

The Exclusive Messages can be transmitted or recognized only when the Exclusive switch on the S−550 is ON. Ignored when OFF.

The Model−ID number of the S−550 is [1EH].

Device−ID can be changed from the panel in MIDI Mode.
The numbers 1−16 on the display correspond to Device−ID codes 0−15, respectively.

Each Address and Size should be 4 bytes of data, respectively.

3.1 One way communication

3.1.1 Request RQ1 11H

Only when the recognized address and size in RQ1 match those on the S−550, it transmits the corresponding data.
It ignores Requests having illegal address or size. *3−1

The S−550 won't tranmit RQ1.

Byte	Description	
F0H	Exclusive status	
41H	Roland−ID	
DEV	Device−ID	
1EH	Model−ID (S−550)	
11H	Command−ID (RQ1)	
aaH	Address MSB	*3−1
aaH	Address	
aaH	Address	
aaH	Address LSB	
ssH	Size MSB	*3−1
ssH	Size	
ssH	Size	
ssH	Size LSB	
sum	Checksum	
F7H	EOX (End of Exclusive)	

3.1.2 Data set DT1 12H

When the recognized Dataset message contains an appropriate address and size data, the S−550 stores the associated data that address.
It ignores any Data set having illegal address.

The S−550 transmits a Data set message when a Tone Parameter is edited on the pannel or when the S−550 recognizes RQ1.

Byte	Description	
F0H	Exclusive status	
41H	Roland−ID	
DEV	Device−ID	
1EH	Model−ID (S−550)	
12H	Command−ID (DT1)	
aaH	Address MSB	*3−1
aaH	Address	
aaH	Address	
aaH	Address LSB	
ddH	Data	*3−2
:		
sum	Checksum	
F7H	EOX (End of Exclusive)	

3.2 Handshaking communication

3.2.1 Want to send data WSD 40H

When recognized WSD message has an appropriate address and size data, the S−550 transmits ACK and waits the associated data.
If not appropriate, it will transmit RJC. *3−1

The S−550 won't transmit WSD.

Byte	Description	
F0H	Exclusive status	
41H	Roland−ID	
DEV	Device−ID	
1EH	Model−ID (S−550)	
40H	Command−ID (WSD)	
aaH	Address MSB	*3−1
aaH	Address	
aaH	Address	
aaH	Address LSB	
ssH	Size MSB	*3−1
ssH	Size	
ssH	Size	
ssH	Size LSB	
sum	Checksum	
F7H	EOX (End of Exclusive)	

3.2.2 Request data RQD 41H

When recognized RQD message has an appropriate address and size data, the S−550 transmits the corresponding data.
If not appropriate, it will trasnmit RJC. *3−1

The S−550 won't transmit RQD.

Byte	Description	
F0H	Exclusive status	
41H	Roland−ID	
DEV	Device−ID	
1EH	Model−ID (S−550)	
41H	Command−ID (RQD)	
aaH	Address MSB	*3−1
aaH	Address	
aaH	Address	
aaH	Address LSB	
ssH	Size MSB	*3−1
ssH	Size	
ssH	Size	
ssH	Size LSB	
sum	Checksum	
F7H	EOX (End of Exclusive)	

3.2.3 Data set DAT 42H

Byte	Description	
F0H	Exclusive status	
41H	Roland−ID	
DEV	Device−ID	
1EH	Model−ID (S−550)	
42H	Command−ID (DAT)	
aaH	Address MSB	*3−1
aaH	Address	
aaH	Address	
aaH	Address LSB	
ddH	Data	*3−2
:		
sum	Checksum	
F7H	EOX (End of Exclusive)	

3.2.4 Acknowledge ACK 43H

Byte	Description
F0H	Exclusive status
41H	Roland−ID
DEV	Device−ID
1EH	Model−ID (S−550)
43H	Command−ID (ACK)
F7H	EOX (End of Exclusive)

3.2.5 End of data EOD 45H

Byte	Description
F0H	Exclusive status
41H	Roland−ID
DEV	Device−ID
1EH	Model−ID (S−550)
45H	Command−ID (EOD)
F7H	EOX (End of Exclusive)

3.2.6 Communication error ERR 4EH

The S−550 transmits ERR if a checksum error occurs.

When ERR message is recognized, the S−550 transmits RJD and ceases the current communication.

Byte	Description
F0H	Exclusive status
41H	Roland−ID
DEV	Device−ID
1EH	Model−ID (S−550)
4EH	Command−ID (ERR)
F7H	EOX (End of Exclusive)

3.2.7 Rejection RJC 4FH

The S−550 transmits RJC and ceases communication if it detects one of the following :
a) ERR is recognized,
b) address in the recognized Dat set is not continuous one and
c) ENTER is activated on the panel during communication.

Byte	Description
F0H	Exclusive status
41H	Roland−ID
DEV	Device−ID
1EH	Model−ID (S−550)
4FH	Command−ID (RJC)
F7H	EOX (End of Exclusive)

Notes :

*3−1 Address and size should specify a memory space in which data exist.
The lowest bit of LSB byte in address and size should be 0.

*3−2 The number of data bytes should be even number.

00 55H	0000 bbbb	aaaa bbbb	0 : A
			1 : B
			2 : C
			3 : D
			4 : E
			5 : F
			6 : G
			7 : H
			8 : ALL
00 56H	0000 aaaa	MULTI LEVEL 1	
00 57H	0000 bbbb	aaaa bbbb	0−127
:			
00 64H	0000 aaaa	MULTI LEVEL 8	
00 65H	0000 bbbb	aaaa bbbb	0−127
00 66H	0000 aaaa	BLOCK 1 DISK LABEL 1	
00 67H	0000 bbbb	aaaa bbbb	32−127
:			(ASCII)
:			
00 7CH	0000 aaaa	BLOCK 1 DISK LABEL 12	
00 7DH	0000 bbbb	aaaa bbbb	32−127
00 7EH	0000 aaaa	BLOCK 1 NOTE 1	
00 7FH	0000 bbbb	aaaa bbbb	32−127
:			(ASCII)
:			
01 5CH	0000 aaaa	BLOCK 1 NOTE 48	
01 5DH	0000 bbbb	aaaa bbbb	32−127
			(ASCII)
01 5EH	0xxx xxxx	dummy	
:			
01 65H	0xxx xxxx		
01 66H	0000 aaaa	EXTERNAL CONTROLER	
01 67H	0000 bbbb	aaaa bbbb	0 : OFF
			1 : MOUSE
			2 : RC−100
01 68H	0xxx xxxx	dummy	
:			
04 65H	0xxx xxxx		
04 66H	0000 aaaa	BLOCK 2 DISK LABEL 1	
04 67H	0000 bbbb	aaaa bbbb	32−127
:			(ASCII)
:			
04 7CH	0000 aaaa	BLOCK 2 DISK LABEL 12	
04 7DH	0000 bbbb	aaaa bbbb	32−127
			(ASCII)
04 7EH	0000 aaaa	BLOCK 2 NOTE 1	
04 7FH	0000 bbbb	aaaa bbbb	32−127
:			(ASCII)
:			
05 5CH	0000 aaaa	BLOCK 2 NOTE 48	
05 5DH	0000 bbbb	aaaa bbbb	32−127
			(ASCII)
05 5EH	0xxx xxxx	dummy	
:			
07 7FH	0xxx xxxx		

Total size 00 07 7FH

4.3 MIDI parameter

Offset address	Description		
00 00H	0xxx xxxx	dummy	
:			
00 3FH	0xxx xxxx		
00 40H	0000 aaaa	RX CHANNEL 1	
00 41H	0000 bbbb	aaaa bbbb	0−16
:			0−15 ··· 1−16 CH
:			16 ··· OFF
00 4EH	0000 aaaa	RX CHANNEL 8	
00 4FH	0000 bbbb	aaaa bbbb	0−16
00 50H	0000 aaaa	RX PROGRAM CHANGE 1	
00 51H	0000 bbbb	aaaa bbbb	0 : OFF
:			1 : ON
:			
00 5EH	0000 aaaa	RX PROGRAM CHANGE 8	
00 5FH	0000 bbbb	aaaa bbbb	0 : OFF
			1 : ON
00 60H	0000 aaaa	RX BENDER 1	
00 61H	0000 bbbb	aaaa bbbb	0 : OFF
:			1 : ON
:			
00 6EH	0000 aaaa	RX BENDER 8	
00 6FH	0000 bbbb	aaaa bbbb	0 : OFF
			1 : ON
00 70H	0000 aaaa	RX MODULATION 1	
00 71H	0000 bbbb	aaaa bbbb	0 : OFF
:			1 : ON
:			
00 7EH	0000 aaaa	RX MODULATION 8	
00 7FH	0000 bbbb	aaaa bbbb	0 : OFF
			1 : ON
01 00H	0000 aaaa	RX HOLD 1	
01 01H	0000 bbbb	aaaa bbbb	0 : OFF
:			1 : ON
:			
01 0EH	0000 aaaa	RX HOLD 8	
01 0FH	0000 bbbb	aaaa bbbb	0 : OFF
			1 : ON
01 10H	0000 aaaa	RX AFTER TOUCH 1	
01 11H	0000 bbbb	aaaa bbbb	0 : OFF
:			1 : ON
:			
01 1EH	0000 aaaa	RX AFTER TOUCH 8	
01 1FH	0000 bbbb	aaaa bbbb	0 : OFF
			1 : ON
01 20H	0000 aaaa	RX VOLUME 1	
01 21H	0000 bbbb	aaaa bbbb	0 : OFF
:			1 : ON
:			
01 2EH	0000 aaaa	RX VOLUME 8	
01 2FH	0000 bbbb	aaaa bbbb	0 : OFF
			1 : ON
01 30H	0000 aaaa	RX BEND RANGE 1	
01 31H	0000 bbbb	aaaa bbbb	0 : OFF
:			1 : ON
:			
01 3EH	0000 aaaa	RX BEND RANGE 8	
01 3FH	0000 bbbb	aaaa bbbb	0 : OFF
			1 : ON
01 40H	0xxx xxxx	dummy	
01 41H	0xxx xxxx		
01 42H	0000 aaaa	SYSTEM EXCLUSIVE	
01 43H	0000 bbbb	aaaa bbbb	0 : OFF
			1 : ON
01 44H	0000 aaaa	DEVICE ID	
01 45H	0000 bbbb	aaaa bbbb	0−15
01 46H	0000 aaaa	RX PROGRAM CHANGE NUMBER 1	
01 47H	0000 bbbb	aaaa bbbb	0−127
:			
02 06H	0000 aaaa	RX PROGRAM CHANGE NUMBER 32	
02 07H	0000 bbbb	aaaa bbbb	0−127
02 08H	0xxx xxxx	dummy	
:			
03 7FH	0xxx xxxx		

Total size 00 04 00H

4.4 Tone parameters

Offset address	Description		
00 00H	0000 aaaa	TONE NAME 1	
00 01H	0000 bbbb	aaaa bbbb	32−127
:			(ASCII)
:			
00 0EH	0000 aaaa	TONE NAME 8	
00 0FH	0000 bbbb	aaaa bbbb	32−127
			(ASCII)
00 10H	0000 aaaa	OUTPUT ASSIGN	
00 11H	0000 bbbb	aaaa bbbb	0−7
00 12H	0000 aaaa	SOURCE TONE	
00 13H	0000 bbbb	aaaa bbbb	0−31
00 14H	0000 aaaa	ORIG/SUB TONE	
00 15H	0000 bbbb	aaaa bbbb	0 : ORG
			1 : SUB
00 16H	0000 aaaa	SAMPLING FREQUENCY	
00 17H	0000 bbbb	aaaa bbbb	0 : 30kHz
			1 : 15kHz
00 18H	0000 aaaa	ORIG KEY NUMBER	
00 19H	0000 bbbb	aaaa bbbb	11−120
			(MIDI FORMAT)
00 1AH	0000 aaaa	WAVE BANK	
00 1BH	0000 bbbb	aaaa bbbb	0 : A
			1 : B
00 1CH	0000 aaaa	WAVE SEGMENT TOP	
00 1DH	0000 bbbb	aaaa bbbb	0−17
00 1EH	0000 aaaa	WAVE SEGMENT LENGTH	
00 1FH	0000 bbbb	aaaa bbbb	0−18

01 22H	0000 eeee		
01 23H	0000 ffff		
01 24H	0000 aaaa	REC LOOP POINT	
01 25H	0000 bbbb		
01 26H	0000 cccc	aaaa bbbb cccc dddd eeee ffff	
01 27H	0000 dddd		000000−221184
01 28H	0000 eeee		
01 29H	0000 ffff		
01 2AH	0000 aaaa	ZOOM T	
01 2BH	0000 bbbb	aaaa bbbb	0−5
01 2CH	0000 aaaa	ZOOM L	
01 2DH	0000 bbbb	aaaa bbbb	0−5
01 2EH	0000 aaaa	COPY SOURCE	
01 2FH	0000 bbbb	aaaa bbbb	0−31
01 30H	0000 aaaa	LOOP TUNE	
01 31H	0000 bbbb	aaaa bbbb	−64−+63
01 32H	0000 aaaa	TVA LEVEL CURVE	
01 33H	0000 bbbb	aaaa bbbb	0−5
01 34H	0xxx xxxx	dummy	
:			
01 4BH	0xxx xxxx		
01 4CH	0000 aaaa	LOOP LENGTH	
01 4DH	0000 bbbb		
01 4EH	0000 cccc	aaaa bbbb cccc dddd eeee ffff	
01 4FH	0000 dddd		000004−221184
01 50H	0000 eeee		
01 51H	0000 ffff		
01 52H	0000 aaaa	PITCH FOLLOW	
01 53H	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
01 54H	0000 aaaa	ENV ZOOM	
01 55H	0000 bbbb	aaaa bbbb	0−5
01 56H	0000 aaaa	TVF ENV SUSTAIN POINT	
01 57H	0000 bbbb	aaaa bbbb	0−7
01 58H	0000 aaaa	TVF ENV END POINT	
01 59H	0000 bbbb	aaaa bbbb	1−7
01 5AH	0000 aaaa	TVF ENV LEVEL 1	
01 5BH	0000 bbbb	aaaa bbbb	0−127
01 5CH	0000 aaaa	TVF ENV RATE 1	
01 5DH	0000 bbbb	aaaa bbbb	1−127
01 5EH	0000 aaaa	TVF ENV LEVEL 2	
01 5FH	0000 bbbb	aaaa bbbb	0−127
01 60H	0000 aaaa	TVF ENV RATE 2	
01 61H	0000 bbbb	aaaa bbbb	1−127
01 62H	0000 aaaa	TVF ENV LEVEL 3	
01 63H	0000 bbbb	aaaa bbbb	0−127
01 64H	0000 aaaa	TVF ENV RATE 3	
01 65H	0000 bbbb	aaaa bbbb	1−127
01 66H	0000 aaaa	TVF ENV LEVEL 4	
01 67H	0000 bbbb	aaaa bbbb	0−127
01 68H	0000 aaaa	TVF ENV RATE 4	
01 69H	0000 bbbb	aaaa bbbb	1−127
01 6AH	0000 aaaa	TVF ENV LEVEL 5	
01 6BH	0000 bbbb	aaaa bbbb	0−127
01 6CH	0000 aaaa	TVF ENV RATE 5	
01 6DH	0000 bbbb	aaaa bbbb	1−127
01 6EH	0000 aaaa	TVF ENV LEVEL 6	
01 6FH	0000 bbbb	aaaa bbbb	0−127
01 70H	0000 aaaa	TVF ENV RATE 6	
01 71H	0000 bbbb	aaaa bbbb	1−127
01 72H	0000 aaaa	TVF ENV LEVEL 7	
01 73H	0000 bbbb	aaaa bbbb	0−127
01 74H	0000 aaaa	TVF ENV RATE 7	
01 75H	0000 bbbb	aaaa bbbb	1−127
01 76H	0000 aaaa	TVF ENV LEVEL 8	
01 77H	0000 bbbb	aaaa bbbb	0−127
01 78H	0000 aaaa	TVF ENV RATE 8	
01 79H	0000 bbbb	aaaa bbbb	1−127
01 7AH	0000 aaaa	AFTER TOUCH SWITCH	
01 7BH	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
01 7CH	0xxx xxxx	dummy	
:			
01 7FH	0xxx xxxx		
Total size		00 02 00H	

4.5 SW

Offset address	Description		
00H	0000 aaaa	SW 1 (all)	
01H	0000 bbbb	aaaa bbbb	
02H	0000 aaaa	SW 2 (character)	
03H	0000 bbbb	aaaa bbbb	
04H	0000 aaaa	SW 3 (patch)	
05H	0000 bbbb	aaaa bbbb	
06H	0000 aaaa	ALPHA DIAL	
07H	0000 bbbb	aaaa bbbb	−127−+127
Total size		00 00 08H	

4.6 Wave data

Offset address	Description	
00 00 00H	0aaa aaaa	aaaa aaab bbbb
00 00 01H	0bbb bb00	12 bit 2's complemet data
:		
:		
01 3F 7EH		
01 3F 7FH		
Total size		01 40 00H

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